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Red Degeneration of Uterine Fibromyomata.*

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WE published, in April 1909, a paper[1] giving the results of our examination of five specimens of red degeneration in fibromyomata of the uterus. We found all these five specimens had thrombosis of the blood-vessels with a large quantity of fat crystals collected around them. We considered the thrombosis to be the primary pathological change and the fat to be a product of metabolism which ordinarily would be carried away in the blood or lymph stream, but now was collected in the tissues owing to the interference with the circulation by thrombosis. The red colour we thought to be due to the staining of the tissue by hæmoglobin. One of the specimens showed a great increase of small, thin-walled blood-vessels which would increase the red colour.

Since that date Leith Murray has published a paper[2] in which he has brought forward evidence to prove the hæmolytic action of lipoids . He dissolved the lipoids out of these red fibromyomata by means of ether and tested the hæmolytic action of his extract on red blood corpuscles suspended in normal saline. He found this action was prevented by the presence of blood serum, so that the hæmolytic action would not occur until the lipoids were present in sufficient quantity to neutralize the serum. The first colour he obtained was red, with a greater quantity of lipoid the saline became brown, with a still greater quantity a black-brown deposit was thrown down and the fluid became clear.

Since writing our previous paper we have had the opportunity of

* Read at the February meeting, Section of Obstetrics and Gynæcology, Royal Society of Medicine.

examining 19 other specimens of fibromyomata of the uterus which exhibited a markedly red surface when sliced across. We now propose to give an account of our whole series of 24 specimens.

Though all these 24 specimens had the common characterististic of red colour, they differed in other ways: in some there was free blood in the tissues, some lost their colour in the Kaiserling solution, some had definite clinical symptoms, while others had none. It seems improbable that the red colour of all these tumours is due to the same pathological change, and it is necessary therefore to note the pathological changes occurring in each specimen and classify them accordingly.

The chief pathological change we find to be thrombosis of the blood-vessels. If we divide our 24 specimens into two groups, the one with and the other without, thrombosed vessels, we find that those with clinical symptoms, with deep red colouration and with no free blood on the cut surface are those in which we find thrombosis, while those without clinical symptoms, with free blood in the tissues and with a tendency to lose the colour in the preserving fluid are those without thrombosis.

Group with Thrombosed Vessels.

Fifteen of our specimens fall into this group. In a few specimens all the vessels appear to be filled with thrombus. In others, and these are in the majority, only a portion of the vessels contain it: again in some the lumen of the vessel is filled with thrombus, in others the thrombus is collected only around the sides of the vessel wall.

In all the specimens of this group, but one, the colour was deep red and showed no tendency to fade in the Kaiserling solution, in which all our specimens are preserved, nor was there any free blood on the surface when the tumour was bisected immediately after operation. In the majority the colouration extended all through the specimen, though in a few it only occurred in one part and gradually faded away, leaving the other part of the tumour the colour of a normal fibromyomatous tumour. In one specimen, No. 3, the red colour occurred in patches around groups of thrombosed vessels: this specimen we shall refer to later in detail. The one exception was of a dirty grey colour, and with the naked eye could be seen to be riddled with vessels filled with thrombus. Clinically this patient had acute abdominal pain prior to operation with rapid increase in size of the tumour. This is apparently one of the cases in which the fat has been in such large quantity that the laking of the blood has given place to a black deposit as described by Leith Murray. All the patients, but one, in this group had clinical symptoms in addition to the mere presence of the tumour or excessive hæmorrhage, prior to operation. Abdominal pain with tender tumour occurred in

7; rapid enlargement of the tumour in 3; high temperature in 3; patient very ill and weak in 4; rapid pulse in 2. Rapid enlargement of the tumour with abdominal pain and tenderness are the symptoms to be expected from a thrombosed tumour. No. 4 had a remarkably acute history. The first symptom was acute abdominal pain commencing in the middle of the night, so severe that her doctor, who was immediately summoned thought she was suffering from ruptured tubal gestation. A gynæcologist was called in, who diagnosed a soft fibroid, which, in view of the acute symptoms, he thought was undergoing red degeneration. A few days later an abdominal hysterectomy was performed, when a single interstitial soft very red fibromyoma with thrombosed blood vessels was found in the uterus.

A thrombosed tumour will very soon commence to disintegrate; when this occurs one would expect the patient to show symptoms due to the absorption of the products of tissue disintegration quite apart from micro-organismal infection of the tumour. This we find did occur in 6 of these patients.

A thrombosed degenerating tumour makes an ideal medium for the growth of micro-organisms which readily reach it from the neighbouring intestines, from the genital canal, or from the blood-stream. Patients infected in this way would suffer from a high temperature, rapid pulse and general symptoms of septicæmia. In the first series we published [1] two tumours were found to be invaded with micro-organisms, one with staphylococci, the other with diplococci. In this additional series of 19 specimens, two had a high temperature prior to operation, and in one of these we found staphylococci. All our specimens were immersed in Kaiserling solution before being opened, so it was impossible to grow the organisms, and we had to rely upon finding them with the microscope. In the whole series 3 patients had a high temperature previous to operation, and we found organisms in two of the tumours; we have no doubt they also occurred in the third, though we could not find them with the microscope. In the third case in which we found micro-organisms, the patient had no rise of temperature, but was extremely ill and had a pulse-rate of 120 per minute. It is interesting to note that three of these four cases were operated upon in the puerperium, one two days, one two weeks, and one three months, after delivery, the infection in these cases being derived probably from the genital canal. In all four cases the symptoms ceased immediately after operation. Since our first communication Bland Sutton [3] has published one case of red degeneration infected with *staphylococcus pyogenes aureus*.

Leith Murray [2] agrees with us that the acute symptoms and the rapid enlargement of the tumour are due to the thrombosis.

Fibromyomata are always described as being poor in blood-vessels, but all these specimens contained large numbers of small thin-walled

vessels, though not always so numerous as in the other group to be described.

All these tumours contain fat, and so support Leith Murray's contention that the colour is due to the hæmolytic action of the lipoids. This we agree with; in fact, in our earlier paper, we drew attention to the large amount of fat collected between the degenerating muscle bundles. We do not, however, agree with his statement that "the disorganization resulting from hæmolysis of the corpuscles induces the deposit of fibrin in a vessel wall already partly disintegrated and ready to precipitate such a deposit." We consider that the thrombosis is the primary change, and that the lipoids are collected in the tissues owing to the interference with the circulation, the laking of the blood occurring when the amount of fat collected in the tissues is sufficiently large to neutralize the antiautolytic action of the blood serum. This is proved by specimen No. 3. This specimen consists of a submucous fibromyoma the size of a pear. A section through it (see Plate I) shows several dark red areas, while the remainder of the tissue retains the appearance of normal fibromyomatous tissue. Microscopical sections taken from one of these dark areas (A) show the majority of the vessels to be filled with thrombus while all through the tissue can be seen large numbers of fat crystals. Sections taken from an uncoloured portion of the tumour (B) show several of the larger vessels with a small amount of fibrin around their walls while the majority of them are quite free. Hardly any fat can be found in this tissue. We thus see that at A extensive thrombosis has occurred, owing to this interference in the circulation much fat has accumulated in the tissues and hæmolysis occurred. In B, the uncoloured portion of the tumour, thrombosis is commencing in the larger vessels, but the process is so early that the circulation has not been interfered with and the fat can still be carried away so no hæmolysis has occurred.

In our previous paper we noted the occurrence of degeneration in all our specimens, just as Fairbairn and Taylor had done. All these specimens showed some degeneration, a few to a slight, others to a very marked degree, but it is very exceptional to find a uterine fibromyoma which is not undergoing slight degeneration.

The question of pregnancy as a causative factor of this condition is interesting. Of the 5 cases we previously published, 1 was pregnant and 3 had recently been confined. Of the 10 new thrombotic specimens, none were pregnant, and only 2 had recently been confined. So of the total 15 specimens only 6 had any relation to pregnancy.

Group with no Thrombosed Vessels.

These are generally of a bright red colour, often with free blood on the cut surface. In every specimen there are numbers of thin-

Plate 1.

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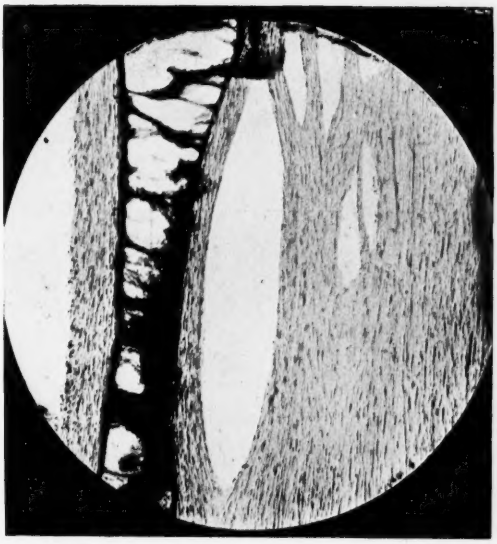

Micro-photograph of section from B. One vessel contains early thrombus, the others are free from thrombus.

Micro-photograph of section from A. All large vessels filled with old thrombus. A few small vessels without thrombus.

walled blood-vessels, generally very small and only visible under the microscope; these are generally completely filled with red blood corpuscles, the whole tumour being in a state of congestion. In the majority of the tumours these vessels are so numerous as to warrant the title of "Angeomatous Degeneration." These numerous small vessels, filled with blood corpuscles, in some specimens alone, in others augmented by free blood in the tissues, are sufficient to account for the bright red colour of the specimen.

Many of these specimens exhibited fresh blood on a freshly cut surface, and the majority of the specimens lost their colour in the preservative fluid, so demonstrating that the colour is due to the presence of the blood and not a hæmoglobin staining of the tissues. Only one specimen showed the presence of much fat, and in this one the colour was a deep red, as in the thrombosed group, and this was not lost in the preserving fluid. Probably in this one fatty degeneration had taken place so rapidly that the vessels, even though they were not thrombosed, were not able to carry it all away, and so allowed of the hæmolytic action. This is a specimen in which we should have expected thrombosis of the vessels if the thrombosis is due to the presence of fat. In one of the others we found a little fat, but this specimen was of a bright red colour, most of which was lost in the preservative.

None of the patients from whom this group of tumours was removed showed any clinical symptoms beyond the hæmorrhage and a feeling of weight due to the presence of the tumour.

Three of the nine specimens in this group were associated with pregnancy, two being pregnant at the time of operation and one three months post partem.

Conclusions.

1. Uterine fibromyomata of a red colour are divided pathologically into two classes—thrombotic and angeomatous.

2. The thrombotic are of a deep red colour which is not lost in Kaiserling solution, nor is there any free blood on a cut surface nor in the tissues.

3. The thrombotic exhibit various degrees of thrombosis; the early ones showing only a collection of thin threads around the walls of a few vessels, while the late ones have all the vessels plugged with them.

4. The thrombotic have clinical symptoms of abdominal pain, tender tumour, rapid enlargement of the tumour, general ill-health, rise of temperature and pulse-rate; these symptoms may occur singly or in combination.

5. All the thrombotic fibromyomata contain a large quantity of fat due to the retardation of the circulation by the thrombosis of the blood-vessels.

6. The red colour of the tumours is due to the hæmoglobin staining associated with the action of the accumulated lipoids.

7. The majority of the specimens in this group contain a large number of thin-walled vessels; in this respect the two groups are similar.

8. The angeomatous group contain large numbers of thin-walled vessels.

9. These vessels are filled with red blood corpuscles; in some specimens the congestion is further advanced and free blood is found in the tissues (hæmorrhage).

10. The colour of these specimens is bright red and tends to fade in the preservative fluid; it is due entirely to the large amount of blood in the tissues and not to hæmolysis and hæmoglobin staining.

11. The patients do not have any clinical symptoms other than bleeding and a feeling of weight due to the presence of the tumour.

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For other references see Leith Murray's, Fairbairn's, and our previous papers.

On the Nature of the so-called Ligaments of Mackenrodt.*

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Recent discussions in the gynæcological journals [1] have raised once more the question of the reality of any such structures as described by Mackenrodt as the "ligamenta colli transversa." Some years ago Dr. Ovenden gave a clear and concise interpretation of her conception of the nature of these "ligaments." [2] Dr. Ovenden quotes Mackenrodt's [3] description of his ligament as follows: "at the sides of the vertebral column, the pelvic fascia can be seen to give rise to a strong band which is inserted into the side wall of the collum uteri. The small weak central mass of areolar tissue between the folds of the peritoneum in the broad ligament is sharply to be defined from this fibrous band which begins at the internal os and springs from the pelvic fascia." I hope to demonstrate that the sketch she publishes of the insertion of the ligament shows clearly that the so-called ligament is simply a portion of the parametrium containing the uterine artery, artificially separated from the surrounding tissues. While agreeing with the physiological functions assigned to the tissues in this neighbourhood by Mackenrodt and Ovenden in that they fix the cervix and form the most fixed point of the uterus, I maintain, that anatomically and physiologically they are of no more importance than the remaining parametrium. It is also impossible to demonstrate or define them as separate entities from the remaining parametric tissue. Any one who separates the layers of the broad ligament and works in this region can dissect out areas of peri-vascular and peri-neural tissue and call them ligaments. The whole structure is nothing but an inseparable continuation of parametrium which surrounds and fixes the cervix.

The work of Delbet,[4] Rieffel,[5] Elliot Smith [6] and Cameron [7] have so changed our conception of the anatomical significance and relations of the pelvic connective tissues that their methods and conclusions must be mentioned. It has been shown, particularly by Elliot Smith and Delbet, that it is impossible to gain any true idea of pelvic connective tissue by the ordinary methods of dissection as the usual method of cleaning arteries, veins, nerves, etc., involves the removal piecemeal of the essential elements of the parametrium.

* A paper read before the North of England Gynæcological and Obstetrical Society.

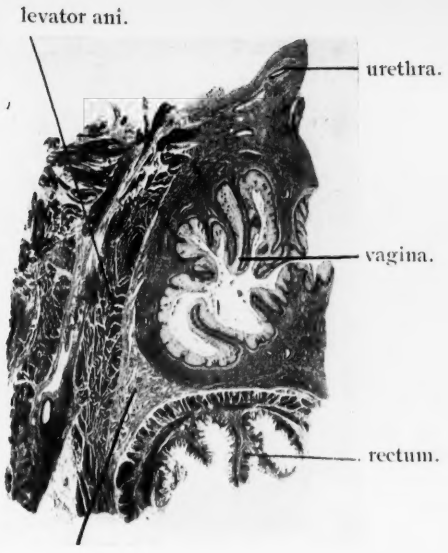
This simple fact explains the old and long established error of the division of pelvic fascia into two layers, visceral and parietal. It also is the cause of Mackenrodt's failure to realize the anatomical relations of his ligamentum colli transversum. Rieffel laid particular emphasis on the futility of attempting to differentiate the structures forming the pelvic connective tissue by this method of examination.

In order to gain any true idea of the arrangement of the parts, sections must be cut in varying directions through pelves in which the tissues have been fixed and hardened and are thus in an absolutely normal and undisturbed condition. My method of procedure has been to cut sections, at various levels and in different directions, of female pelves obtained soon after death, fixed and hardened in formalin. I have also examined microscopically some sections of fœtal pelves made by Mr. Harry Platt [8] in this department. This process and method of examination obviously ensures the parts preserving their exact relationship, and the element of dissection disturbance is eliminated.

In order to illustrate this paper, I show sketches and photographs of two sections of the pelvis. The first is cut transversely across the pelvic contents from a woman aged 30 years with the uterus in normal position. The section was made at a level between the internal and external os, a little above the latter (Diag. A). It shows the dense parametrium surrounding the cervix continuous with the para-vesical tissue in front and the triangular-shaped para-rectal tissue behind. Thus there is one continuous sheet of tissue with no traces of a "definite fibrous band."

I traced this tissue in series of sections. It is densest at and surrounds the whole of the lower uterine segment. It is artificial and wrong to define the lower limit of this as different from the upper. It is absolutely the same continuous parametric tissue. This mass of mesodermal tissue, consisting as it does of smooth muscle, connective tissue, perivascular and perineural substances, can be well seen in some sections I have of a fœtal pelvis. It surrounds the bladder in front, the rectum behind, and clothes the visceral surfaces of the levatores-ani completely. The photograph (Fig. B) of the beautiful oblique (transverse) section through the pelvis of an Egyptian woman, kindly placed at my disposal and made by Prof. Elliot Smith in Cairo, shows the relatively enormous mass of highly vascular tissues surrounding the cervix.

In no section can one find a separate area of tissue with definite insertions as described by Mackenrodt, nor is there "a weak small centre of areolar tissue between the folds of the broad ligament" previously described. It consists of dense masses of smooth muscle, perivascular and perineural tissues, and is in reality the vascular pedicle of the uterus. All this tissue, as I have mentioned, is



Section of Fœtal Pelvis.

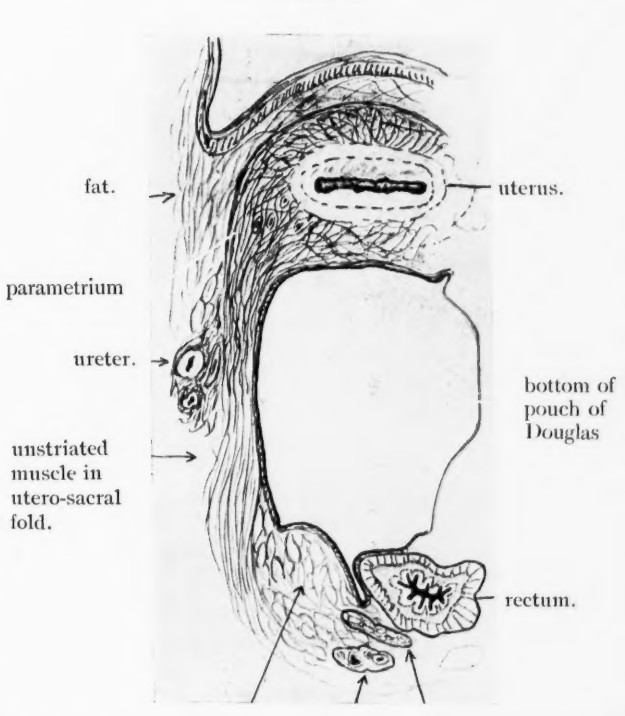


Diagram A.

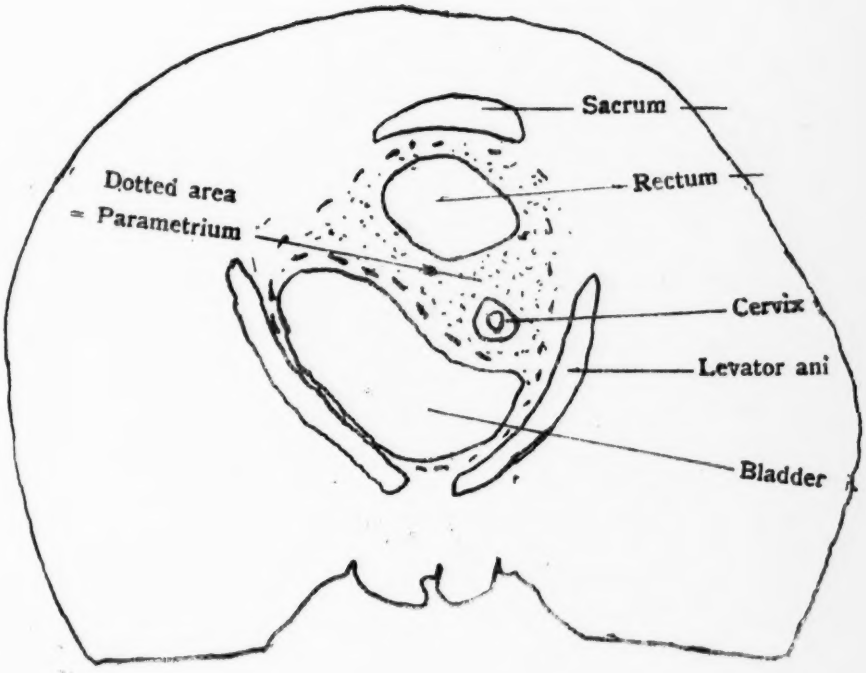

Sacrum
Rectum
Dotted area
= Parametrium
Cervix
Levator ani
Bladder

Figure B.

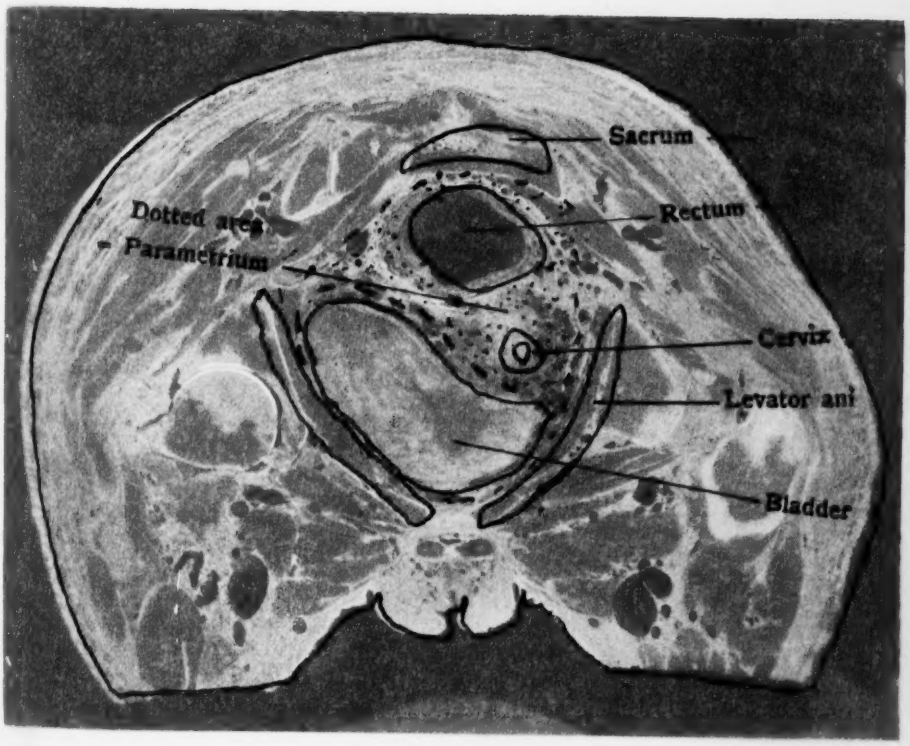

Sacrum
Rectum
Dotted area
= Parametrium
Cervix
Levator ani
Bladder

Figure B.

Mac U

intimately connected not only with the neck of the uterus and *cul de sac* of the vagina, but also is continuous with that in relation with the rectum, bladder and urethra. One can understand how this vascular pedicle thus reinforced contributes so largely—I venture to suggest completely—to the fixation of the uterus.

It must be mentioned that this tissue, though it seems to arise from the pelvic fascia, never becomes isolated from it and never loses its relationship to it. It is simply the pelvic areolar tissue strengthened by peri-vascular sheaths, the directions of which are of course that of the blood vessels which they invest.

In the original discussion on this subject there was some confusion and vagueness about the so-called utero-sacral ligaments. The structures which bear this name are small folds of peritoneum running from the neck of the cervix to the sides of the rectum. These folds contain nerves, perineural connective tissue and smooth muscle. In the vicinity of the anterior sacral foramina between the third and fourth piece of the sacrum the nerves for the supply of the uterus and rectum issue. These form two bundles (nervi erigentes) surrounded by dense areas of perineural tissue, viz., pushing their way through the mesodermal parametrium they become invested and incorporated with it. Reaching the rectum they form the "rectal stalks" described by Elliot Smith; carried onwards if dissected out they form these so-called sacro-uterine ligaments. They consist then of nothing but the nerve supply to the uterus and some smooth muscle, common to all the parametrium, dissected free from its true relations. The two sections I have chiefly used to illustrate this paper were cut precisely in the plain to show Mackenrodt's ligament, if it existed. I therefore submit that without artificial dissection it cannot be demonstrated, however "easily," to use Miss Ovenden's expression, it may be manufactured by removing the rest of the parametrium.

Microscopical examination of the area of tissue running into the cervix in the region Miss Ovenden marks as the insertion of "Mackenrodt's ligament," shows no characteristics which would define it from the remaining parametrium.

It is obviously then an anatomical error and misleading to describe as a separate entity a few bands artificially separated from the remaining parametric tissues.

My thanks are due to Prof. Elliot Smith for his kind permission to use material in his department.

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Note on Dr. Gemmell's and Prof. A. M. Paterson's Case of Duplication of Bladder, Uterus, Vagina, and Vulva with successive Full-time Pregnancy and Labour in each Uterus.

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The issue of this Journal for January 1913, pp. 25 *et seq.*, contains an excellent account of a carefully observed and very rare, if not unique, malformation of the female genitals. Its explanation is difficult and I should like to give an interpretation of it from a different standpoint than that adopted by the authors.

Summary of the Case. The patient was married, 32 years of age, had a very wide and split pelvis; the interval between the pubic ends was $5\frac{7}{8}$ inches. There were two separate uteri (or rather cornua) each with an ovary; two vaginæ, a double vulva, bladder and urethra. The anus and perineum were single and behind the left vulva. There was no *mons veneris* and no hair nor sweat glands in the skin between the pubic ends. The skin there was thin and there was a clearly demarcated border through which abdominal viscera can be palpated. At the anterior margin of this space was a puckered somewhat stellate raised cicatrix about an inch in diameter. This area, they suggest, is the umbilical one.

The account of the two labours need not be recapitulated.

The authors hold "that there has been no allantois or proper umbilical cord: that the fœtal belly wall was in contact with the placenta and that at birth the orifice was ligatured and the thin skin drawn over it to cover it and complete the body wall." They add: "The stellate cicatrix represents a pseudo-umbilicus, and the closure of the fœtal body cavity at its junction with the placenta. We regret that we are unable to get any information bearing upon the birth of the patient herself."

The authors hold that normally the allantois is largely responsible for the formation of the umbilical cord and that in its absence "no normal bladder is formed and no cord."

In Suppinger's case the rectum was double.

An alternative interpretation. The authors hold that the allantois gives the umbilical cord and urinary bladder. It is, however, quite a rudimentary structure in the human embryo and is present in the early funis as a degenerated tube. When the authors say "Presume that no allantois is formed," they practically describe what is present normally in the human embryo.

The cord is formed, as His showed, in the human embryo by the posterior end of the embryo and not as in the chick, and the amnion is not due to any folds rising and meeting but appears as a cleft in the mesoblast, well shown in Peters' embryo. The bladder is not formed from the allantois, except at its apex probably, but arises from the anterior division of the primitive gut, in the part known as the entodermal cloaca or *pars penultima*, as I have termed it, the tail gut being the *pars ultima*. All this has been clearly shown by Keibel mainly.

There is, however, a very important embryological fact the authors have disregarded. I refer to the cloacal membrane.

The cloacal membrane is the anterior mesial boundary of the entodermal cloaca (the authors' internal cloaca) and can be studied in Keibel's paper and in his models. It runs from the site of the future navel down and back as far as the perineum of the infant. At first it does not contain mesoblast, only ectoderm and entoderm, and if it yields it gives rise to extroversio vesicæ and various degrees of epispadias. The area bounded above by the authors' pseudo-umbilicus, below by the perineum, and lying between the separated ends of the pubic bones, corresponds to this membrane, and it is therefore a most feasible opinion that non-formation of the mesoblast in the cloacal membrane in this case gave rise to the split pelvis and the remarkable condition of the skin there.

The interpretation of the double vulva and double bladder and urethra is more difficult.

The first thing that strikes one is the resemblance of the external genitals to those of a pygopagous twin. In identical twins we may suppose that the determinants in the somatic part of the zygote double equally and segregate. In a pygopaga the same segregation happens but not in the pelvic region. The doubling may be irregular and local and thus the varieties of allantoido-angiopagus twins.

In this case I suppose there has been a doubling of the determinants for the entodermal cloaca and external genitals. If the entodermal cloaca were thus double we would necessarily get a double bladder, urethra and rectum. The authors do not explain how the double bladder and urethræ arise.

In regard to the cornuo-vaginal tract in this case it is comparable with that of the marsupial.

The authors state that "from an examination of human abnormalities the balance of evidence is in favour of the whole length of the vagina being formed from the united Müllerian ducts, the external cloaca merely forming the vestibule of the vulva (urogenital sinus)." There is an obscurity here but the view they state can be put clearly as follows. In the adult human female the Fallopian tubes, uterus and vagina arise from the Müllerian ducts, and the vestibule between the external surface of the hymen, base of the

labia minora, clitoris and fourchette internal base, represents the urogenital sinus. This is an error, as the urogenital sinus is very long in the early six-weeks' embryo, and is represented in the adult by the vestibule and lower third of the vagina. The adult vagina therefore has Müllerian elements (upper two-thirds) and a urogenital sinus element in its lower third. The hymen is an organ of the urogenital sinus and is not Müllerian. In the marsupials the vagina has a Müllerian central portion and the lateral canals represent a Müllerian portion also, as well as a Wolffian part; with a urogenital sinus below, into which the lateral canals open. In uterus didelphys in the human female the vagina is double, but is made up of non-coalesced Müllerian ducts and non-coalesced Wolffian ducts. It has been said that in this malformation we should have, according to my view, the lower one-third of the vagina single as representing the urogenital sinus. The septum between part of the lower ends of the Wolffian ducts persists, however, and thus the single urogenital sinus is divided into two lateral parts continuous with the Müllerian lumina.

There is a rare condition which shows the extent of the urinogenital sinus, viz., where a transverse septum, an inch from the hymen, obstructs menstruation and leads to hæmatocolpos. Above the septum is the Müllerian element of the vagina; below it the urinogenital portion, and then continuous with that, the vestibule.

The double utero-vaginal canal in the authors' case is probably a coincidence; at any rate from the clinical data one is unable to come to any other conclusion as yet.

I might have discussed some additional points but this would require illustrations which I am unable to give the time to prepare. I may, however, add some literature bearing on the subject and conclude by congratulating the authors on their valuable and admirably recorded case.

Keibel, *Arch. für Anat. und Phys.*, 1896. Keibel and Mall, ii, 295. "A vesicular or even only a free allantois has never been found in human embryos, and the slender duct in the body stalk, the allantoic duct as I have formerly named it, is indeed only a very rudimentary representative of the structure which is so large in many mammals" (His). Hart, D. Berry, "Guide to Midwifery, pp. 82 to 89 and 116.

Endothelioma of the Undescended Testis in a Male Pseudo-Hermaphrodite.*

By Thomas Wilson, M.D.,
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On January 13 1910, a patient, Miss T., aged 29, consulted my friend, Dr. A. E. Richardson, on account of severe lower abdominal pain and of the passage of blood in the urine, said to be a catamenial period. The pain and loss continued for five or six days and at that time there was no swelling in the hypogastrium. On February 21 the pain set in again severely and on the next day there were repeated green vomiting and distension of the abdomen. A tumour was then discovered in the hypogastrium. On the morning of the 23rd the temperature was 100 and the pulse 120. In the afternoon I saw the patient with Dr. Richardson, the temperature was then 99·2 and the pulse 120, and severe pain was present in the region of the umbilicus. In the lower abdomen a fairly defined, rounded, tense and elastic tumour extended from the pubes upwards to two inches below the umbilicus. The left lower part of the tumour just above the pubes was hard and very tender. Dullness to percussion extended upwards for two inches above the pubes, especially on the left of the middle line; the rest of the abdomen was resonant.

The patient had been brought up as a woman and had been carrying on the trade of a butcher in partnership with another woman. The voice was masculine; the cheeks, chin and upper lips were covered by sparse, coarse hair half an inch in length, forming a rudimentary beard and moustache. The hair of the head was fairly plentiful and nearly three feet in length. The patient's figure was markedly feminine, the breasts were small, but the nipples and areolæ were well formed. The pubic development was female in type.

The labia majora were thin and rather lank; between them was a deep cleft in the anterior part of which was a penis-like organ, two and a half inches in length by three-quarters of an inch in thickness, with a well-marked glans. On the lower surface of the glans was a depression but no orifice; about one inch further back in the middle line was the opening of a mucous canal, and running backward from this a well-marked median raphè. In the right labium majus was a

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soft, elastic, freely movable, somewhat tender body as large as a hazel-nut, which could be pushed upwards into the inguinal canal. The left inguinal canal and labium majus were empty. A catheter passed into the urethra-like orifice on the lower surface of the penis met with obstruction after passing about one inch: it then turned upwards under the pubes and entered the bladder about 2½ inches from the orifice. Examination by the rectum showed the pelvic cavity to be filled by a mass about the size of a cocoanut, with long axis transverse. The tumour was fixed and somewhat tender and varied in consistence, the lower part being hard and the rest firm, elastic and well-defined. Running backwards in the middle line below the mass was a cylindrical body about the size of the forefinger. The posterior end of this was rounded, and the posterior half rather thicker than the anterior. The swelling was somewhat movable from side to side and in front appeared to join the urethra just at the border of the pubic arch, where resistance to the passage of the catheter was encountered.

The patient stated that at about twenty years of age she began for the first time to lose blood with the urine and since then had done so fairly regularly for three days every month. The loss was accompanied by little discomfort and there was practically no pain. A "rupture" had been present in the right groin ever since she could remember. For a year or so there had been some abdominal pain gradually increasing in severity until Dr. Richardson was sent for as mentioned above.

Eleven days after my first visit, on March 6, the abdominal tumour had increased considerably, extending upwards as high as the umbilicus and being decidedly more prominent anteriorly. It was well defined and slightly tender and the upper part was resonant to percussion. Since my last visit the temperature had been raised one or two degrees nearly every evening. The day following my examination a little blood was present in the urine on three or four occasions.

A probable diagnosis was made of a tumour, possibly hæmatometra, in one half of a double uterus, with a rapidly increasing hæmatocele; or a rapidly growing tumour in the left germinal gland possibly with a twisted pedicle. It was determined to open the abdomen without delay and this was done by means of a transverse incision, the anæsthetic being administered by Dr. Evans of Kingsbury and Dr. Richardson assisting. The abdominal walls were very vascular and many veins of large size were divided. For three and a half inches above the pubes the peritoneum, which was of a dark bluish-grey colour, could not be separated from the underlying parts. At about five inches above the pubes, division of the peritoneum opened into the cavity, and disclosed the omentum broadly adherent to the right upper part of the tumour. Coils of

small intestine and pelvic colon were incorporated on the left side, so that separation could not be made. Whilst being gently examined the tumour burst at its lower part and about an ounce of soft solid and extremely friable material of mottled bluish and granular grey colour escaped. In trying to define the tumour a further portion broke down and masses were scooped out from the interior in all as large as three fists. At the left lower part, Douglas's pouch was entered, but the adhesions were so intimate that any attempt at removal was impossible. Some of the superficial part of the tumour was reserved for microscopic examination. The naked eye appearances were similar throughout the parts removed.

The rounded body in the right labium majus had increased to nearly double the size since my first visit. It was cystic, and during the operation apparently collapsed. A fleshy cord issuing from the pelvis from beneath the right side of the tumour entered the right internal ring. This cord was withdrawn from the inguinal canal and divided as low down as could conveniently be reached, below the level of the swelling that had been felt. The abdominal incision was closed by buried catgut sutures to the peritoneum and aponeuroses and silkworm gut sutures to the skin.

For the subsequent history I am indebted to Dr. Richardson.

A fortnight after the operation the incision had healed but the patient had wasted almost to a skeleton. During the third week thrombosis of the right iliac vein occurred, and in the fourth week a necrotic spot appeared on the abdominal incision. From it there escaped a continuous discharge of gangrenous fluid containing particles that looked like portions of the growth. Death supervened on April 2nd.

The fleshy cord removed from the right inguinal canal contained a peritoneal pouch continuous with the general peritoneal cavity. At the distal end was a thicker, opaque white-walled portion covering a small oval mass of tissue, apparently an atrophied genital gland, which was attached to a cord-like structure. The gland measured one inch by $\frac{3}{4}$ inch, was flattened from before backward and roughly almond-shaped. The surface was corrugated, and on section the tissue was homogeneous, grey in colour and presented no soft or cystic area. From the upper broader extremity a cord-like structure ran towards the proximal end of the specimen; two inches from its attachment this was acutely bent on itself and doubled back to reach the gland, the flexion being maintained by a few fibrous bands at the acute angle. Section of the proximal end of the cord showed two rounded tubes, one of them a large vein, and the other resembling an atrophied *vas deferens*. The stroma of the cord consisted of fibrous tissue containing many thick-walled blood-vessels. In sections from the genital gland was seen a basis of connective tissue in which were numerous tubules lined by several layers of cells with

Fig. 1. In the upper part of the section several seminiferous tubules are seen. In the lower portion the vas deferens is cut in transverse section.

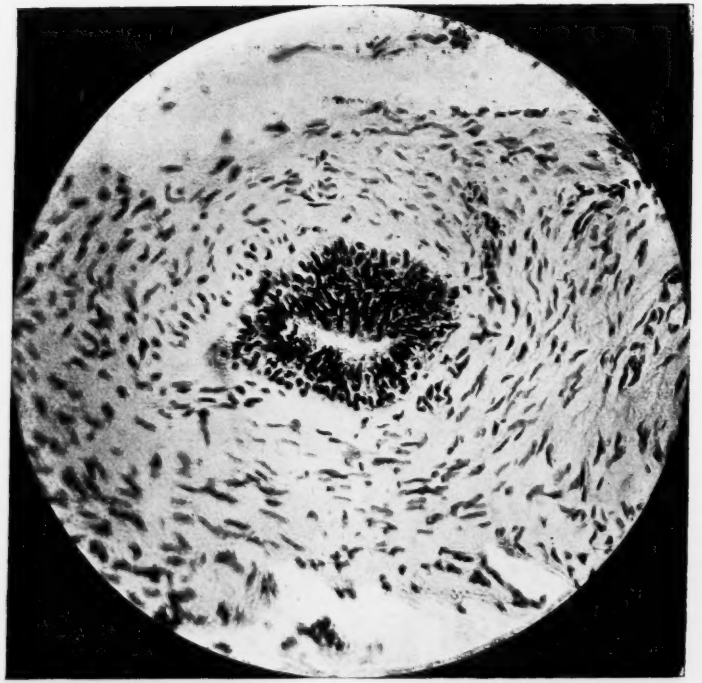

Fig. 2. One of the seminiferous tubules under high magnification. (Obj. 1/6.)

Fig. 3. Section of the new growth of the left germinal gland. The high degree of vascularity of the tumour is well seen, as well as the apparent origin of the malignant cells from the endothelium of vessels. At the lower part is seen part of an extensive hæmorrhage.

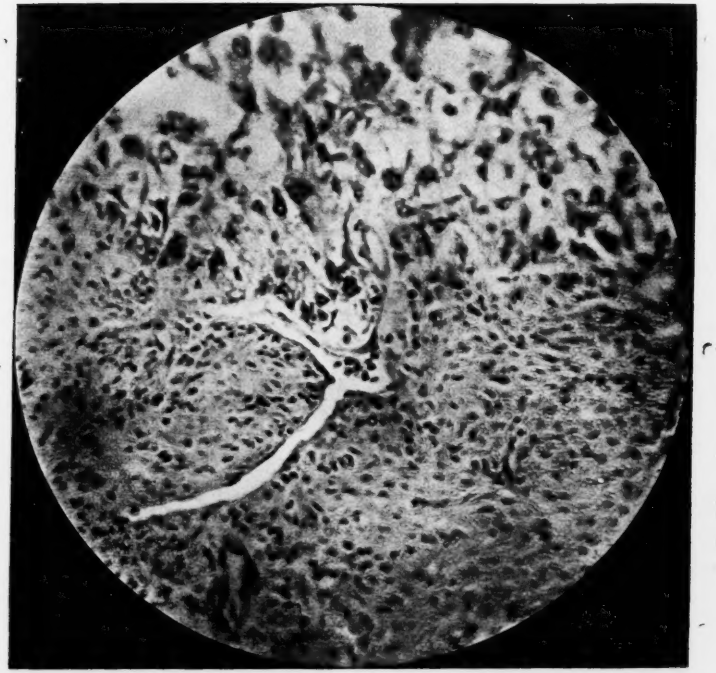

Fig. 4. A portion of the tumour under a high power (obj. 1/6th), showing the large irregular cells and nuclei, and the relation of the cells to one side of a vessel.

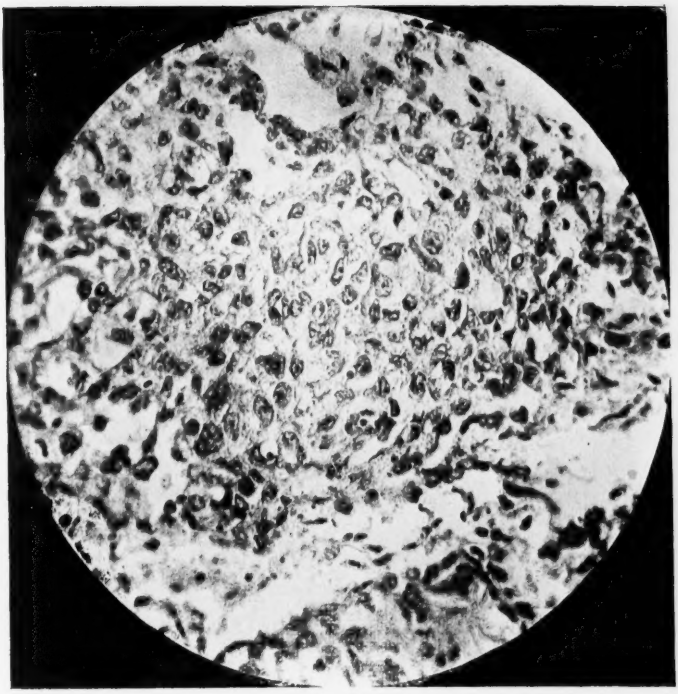

Fig. 5. From another portion of the neoplasm under high magnification (obj. 1/6), showing the large embryonic type of cells and their relation to the blood-vessels.

round or oval darkly tinted nuclei. These ducts resemble the seminiferous tubules found in undescended testes. At one part a large tube is lined by many layers of epithelium and possibly represents the *vas deferens*. Sections of the new growth show this to consist essentially of irregular masses of large sarcomatous cells, varying much in size and shape, some being round and others oat-shaped or irregular. There is a large amount of blood clot present, with portions of this new growth scattered through it, the whole suggesting the appearance of chorion-epithelioma. In some places, however, the cells appear to proliferate from one side of the wall of a vessel, apparently from the endothelium. In the tissue from the inguinal region the growth appears to be spreading along the surface of the peritoneum. There is here a cavity lined by tissue of a very malignant sarcomatous type upon a stroma of connective tissue.

In Klebs' classification spurious hermaphrodites are divided into male and female, and each of these classes is subdivided into external, internal, and complete. The case now under consideration appears to have been an example of the complete male variety. The partially descended right germinal gland was a testis with a *vas deferens*, and the malignant growth which caused death had with great probability originated in a left testis retained in the pelvis. The body which on rectal examination was felt running backwards in the pelvis was probably an ill-developed uterus continuous with a vagina which was joined by the urethra to form a urogenital sinus; this opened at the base of the rudimentary penis. The external genitals were of a form common in male pseudo-hermaphrodites, hypospadias with a partial cleft of the scrotum, at the anterior end of which the urogenital sinus opened at the base of the penis. Unfortunately the absence of a post mortem examination precludes certainty. The evidence derived from the secondary sexual characters is not of much importance, and I was unable to obtain any information as to the sexual capacity or inclination.

The occurrence of menstruation offers a serious and interesting difficulty, but does not seem to be conclusive of the female sex. I think the periodical discharges of blood in the urine, one of which was actually observed while the patient was in hospital, must be looked upon as catamenial, although there are obvious objections. For instance, it is not easy at first sight to see why the blood escaped only on micturition, although there was a urogenital sinus, and the urethra apparently joined the anterior wall of the lower end of the vagina; but it is obvious that the sinus must have functioned as a urethra, otherwise there would have been more or less incontinence of urine, and this had never been a symptom; presumably the menstrual blood in the intervals of micturition either collected in the vagina, or was discharged into the bladder.

Several cases of apparent menstruation in male pseudo-herma-

phrodites are on record, and a number of these are mentioned in Neugebauer's great collection. Among them one of the least unsatisfactory is described by Andrew Clark in the case of a person aged 42 who had been brought up as a female and married for 16 years; menstruation began at 12 and continued from 15 until 38 every four weeks, lasting for one day each time. Mr. Clark was inclined to take the history of menstruation *cum grano salis*, but if the patient was a circumstantial liar, it is somewhat curious she (!) should have fixed the menopause at 38, four years before her stay in hospital, and should have given no history of climacteric troubles. Of course it may be argued that the patient could not have menstruated in the absence of ovaries; if the facts don't fit in with the theory, so much the worse for the facts.

New growths of many varieties are far from rare in the genital organs of spurious hermaphrodites, but there does not seem to be any notable predisposition. Among Neugebauer's 1,257 observations are included 32 cases with tumours, of which 15 are described as occurring in a testis; the nature of the growth is stated to have been sarcoma in 5, teratoma in 3, carcinoma in 3, adenoma in 3, and chorio-ectodermal epithelioma in one. Pick has collected and gives details of 31 new growths in the rudimentary genital organs of about 1,000 hermaphrodites. Of these one was a suprarenal tumour in the broad ligament; the uterus was the seat of myoma in 3, cervical cancer in 2, and alveolar sarcoma in one, instances. The genital gland was affected in 24 of the cases, the organ being a testis in nine, an ovary in 5, and nondescript in 10. Pick concludes that teratoma is the most important form of tumour in these germinal glands, and that it not uncommonly develops as a chorio-ectodermal epithelioma with the appearance of carcinoma, of alveolar sarcoma, or cyst; he suspects that sarcoma is really a one-sided development of a teratoma.

In the case here described the large hæmorrhages which made up a great part of the bulk of the growth remind us of malignant chorionepithelioma; there was, however, nothing distinctive in the form and arrangement of the cells, and no syncytial masses were seen. The absence of any epithelial structures put all forms of carcinoma and adenoma out of court. The new growth is a typical sarcoma in the arrangement and characters of its cells and vessels; there is no alveolar formation; but at various parts the cells are seen growing away from the thin endothelial walls of vessels. The tumour therefore appears to be an endothelioma, and with a high degree of probability it took rise in a retained testicle.

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SELECT CLINICAL REPORTS.

(Under this heading are recorded, singly or in groups, cases to which a special interest attaches either from their unusual character or from being, in a special sense, typical examples of their class.)

Notes on a Case of Pseudo-hermaphroditism.*

By Christopher Martin, F.R.C.S., Birmingham.

In describing this case I shall speak of a patient as if she were a woman, although, strictly speaking, she was a malformed male.

Mrs. P., æt. 44, consulted me in August 1910. She had been married to a man for about twenty years, but had never been pregnant nor had she ever menstruated. She came suffering from an ischio-rectal abscess which required incision and drainage. At the same time she drew my attention to two oval swellings, one in each inguinal region. She had had these for many years, but lately they had become more tender and swollen. Each was oval, elastic and movable, and had the shape and feel of a testicle, and was situated just within the inguinal canal. The patient was a shy, timid, retiring creature with nothing suggestive of masculinity about her. The voice was feminine in character, and she had no signs of hair about her face. The breasts were moderately well developed.

The patient was slim, and the pelvis rather narrow. The pubic hair was scanty. The external genitals exactly resembled those of a woman. The clitoris and the labia majora and labia minora were normal in appearance. The meatus opened in the centre of the vestibule well away from the clitoris. Around the mouth of the vagina were the caruncular remains of the hymen. The vagina itself was a blind cul-de-sac, about an inch deep and an inch long. Above the vagina the bladder and rectum came into contact, there being no trace of a uterus. As I said before, the patient had been married to a man for twenty years. Coitus had taken place regularly and apparently to the satisfaction of both parties. I advised her to have the inguinal swellings removed, as they were becoming more and more painful. She consented, and I removed them in February 1912. She made a good recovery from the operation.

As I anticipated, the swellings proved to be testes. Each had a well-formed glandular body and epididymus, and from each a spermatic cord proceeded containing a vas deferens. On the left

* Read before the Midland Obstetrical and Gynæcological Society.

side, I opened the peritoneum, and was able to trace the vas arching downwards and inwards behind the bladder.

Mr. Bernard J. Ward very kindly examined the specimens, and reported as follows:—

"Each is enclosed within a definite and well-defined serous sac indistinguishable from a normal tunica vaginalis. Each consists of a rounded firm body; there is a well-formed epididymus, with both globus major and minor, at the upper and lower ends respectively. The thinner part of the epididymus, connecting the two enlargements at the upper and lower poles, is separated from the body by a digital fossa, lined, as in the normal organ, with a serous coat.

"The globus major in both specimens is cystic that of the left being the larger. The globus minor in both is larger than normal and very hard.

"There is a well-developed spermatic cord to each specimen, consisting of a vas deferens and numerous veins.

"I have dissected out the vas in one of the testicles and traced it into the globus minor of the epididymus with which it becomes continuous.

"I have taken sections of the body, epididymus (in two parts) and vas deferens of one of the specimens; the other I have left untouched in order that its appearance should not be altered in any way.

"*Sections of the testes.* These show marked atrophy of the tubules with great proliferation of the interstitial cells. The basement membrane of the tubules is replaced by thick, concentrically fibrillated layers of connective-tissue, and in many of the tubules this has completely filled the lumen. There are, however, a few tubules still remaining in which traces remain of the spermatogenic epithelial lining, but it has lost its regular arrangement and is obviously atrophic. The main mass of the body is composed of proliferated epithelial-like masses of the interstitial cells, the few tubules that remain forming a quite insignificant part of the whole.

"*Sections of the epididymus.* The globus minor consists for the most part of fibro-muscular tissue, but at one part of the section the tubules are quite easily recognizable, small and atrophic and lined with several layers of flat epithelium instead of the normal columnar epithelium.

"*Sections of the vas deferens.* Show a more or less normal tube consisting of several layers of involuntary muscle and lined by a definite flattened epithelium. There can be no doubt that these two specimens are testicles, but it is very improbable that they have even been functionating ones. They in every respect resemble testes removed from the inguinal canal of youths and young men, that is, testicles which have atrophied from pressure, etc., and in a less degree the atrophic testicles of old men.

"The following are the measurements:—Right testis: body length, 3·1 cm.; width, 2·3 cm. Left testis: body length, 2·2 cm.; width, 1·8 cm.

"I have aspirated the fluid from the cystic globus major in one specimen and examined it in the hope of finding spermatozoa, but, except for a few epithelial cells, there was nothing else present. The fluid was quite clear."

Mr. Martin showed the specimens and photographs.

Figs. 1 and 2. Photographs showing the appearance of the external genitals.
Fig. 3. A micro-photograph of the testis.

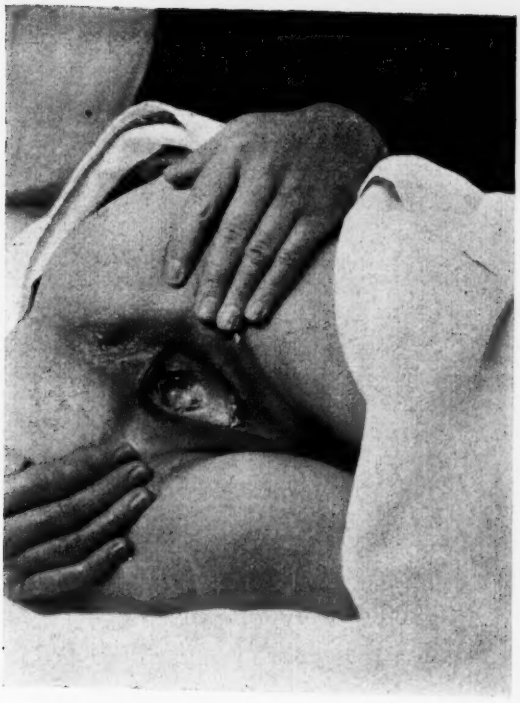

Fig. 1.

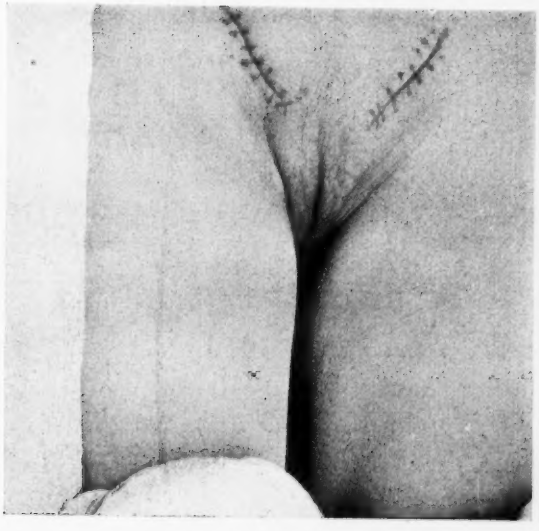

Fig. 2.

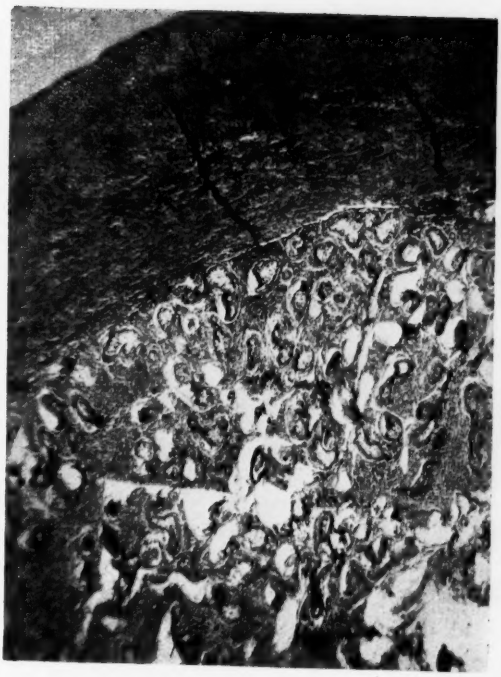

Fig. 3.

A Case of Fibro-Sarcoma of the Ovary.*

By Gibbon FitzGibbon, M.D., F.R.C.P.I.,
Gynæcologist to the Royal City of Dublin Hospital.

The following case I thought might be of interest as the frequency of sarcoma of the ovary is small in comparison with other tumours, and cases do not often appear recorded in the literature. Revano,[1] in a study of 699 tumours of the ovary recorded sarcoma as occurring in 4 per cent., and affecting both ovaries in half the cases.—He says that ovarian tumours in childhood up to 15 years of age are almost always sarcoma, or sarcomatous degeneration of a cyst. Bushwell and Karrawalla[2] reported a series of 16 ovarian neoplasms, mainly malignant, amongst which were one of round-celled sarcoma and one of fibromyoma undergoing sarcomatous change. Mrs. Scharlieb,[3] in March 1910, in a paper on the proportion of malignant to innocent ovarian growths recorded 150 cases, 25 of which were malignant, four being sarcoma, one secondary to sarcoma of the uterus. She states that it is impossible to tell the nature of a tumour by the naked eye. MacNaughton-Jones[4] found one sarcoma in 100 cases, and in the records of 2,893 cases from German clinics found 309 indisputably malignant, 22 being sarcoma. This gives a percentage of only ·75, which is much less than other authorities but is fairly close to MacNaughton-Jones' own experience. Glendining[5] among 106 ovarian tumours found 3·8 per cent. sarcoma of primary origin in the ovary. Wermuth,[6] analyzing the cases in the German literature, gives the percentage of sarcoma as about 5 per cent. of all ovarian tumours, and relatively more frequent in children, 6 per cent. of Pfannenstiel's cases being under 10 years of age. The same operator found the greatest frequency between the ages of 21 and 30 years.

Ovarian sarcomata are usually solid, and all varieties may be found, spindle, round, and mixed-celled. They are usually primary and frequently bilateral. Metastases are frequent in the uterus, tubes, and other organs, and multiple adhesions are a common complication. Hertz[7] reports a case which he claims to be only the third recorded of fibromyoma of the ovary undergoing sarcomatous degeneration. He says that most of the cases of fibrosarcomata of the ovary reported are of the spindle-celled type and began as primary sarcomata, the chief feature being a relative increase of

* Read before the Obstetric Section of the Royal Academy of Medicine in Ireland, December 13, 1912.

fibrous tissue formation. Briggs and Walker [8] reported 438 ovarian tumours, 49 of which were solid, and of these one was found to be sarcomatous and one a teratoma including sarcoma. Briggs claims that the highly cellular connective tissue tumours of the ovary are not necessarily sarcomata, and that the ovarian fibromyomata commonly consist of spindle and round cells amidst a fully-formed fibrous interlacement in varying proportions, but the overwhelming evidence of innocency amongst these tumours displaces the idea of sarcomata.

During the past 15 years in the Rotunda Hospital Reports [9] 343 tumours of the ovary are recorded, and of these six were sarcoma. Three of the six patients died in hospital, two left hospital as inoperable, and one left well after operation. Rachel,[10] speaking of malignant ovarian tumours in general, states that only 20 per cent. of those operated upon were alive two years after operation, and a considerable number of these had already inoperable recurrence. He considers that all ovarian tumours should be operated upon as soon as possible.

The history of the present case is as follows: Mrs. L., aged 44 years, was delivered of a child five years ago, and had considerable trouble at her confinement, the labour being prolonged and terminated with forceps. She was sent into hospital shortly afterwards for the repair of a complete laceration of the perinæum. When leaving hospital the tear in the sphincter ani was repaired but the rest of the perinæum had not united, and she was told that she should have a second operation, but refused. I have been able to get the notes of the case at this time and there is no mention of any tumour in the pelvis. There is a note "to be operated on again," but the patient thinks that there was some suggestion made to her at the time of a tumour being present, and thinks that the abdomen had been large since her confinement. During the last two years she had noticed the increasing size of her abdomen, and for the past twelve months had suffered from gastric irritability, palpitation, and breathlessness on the least exertion. When I first saw her she was a stout healthy looking woman, but became breathless very easily. On examination of the abdomen I found a tumour extending from the pelvis to two inches above the umbilicus, and filling the lower abdomen particularly on the left side. By vaginal examination the tumour was found to be quite out of the pelvis. The cervix was high up, and the fundus small and in front of the tumour. The diagnosis of fibroid, probably of the left ovary, was made.

Operation. The abdomen was opened in the middle line, a large solid tumour presented, which was found to be springing from the left broad ligament. There was one dense adhesion between the tumour and the posterior abdominal wall in which the right tube and ovary were involved. The tumour was removed without any

difficulty and, owing to the manner in which the right tube and ovary were involved, it was thought best to remove them also. When the tumour was removed it was considered a simple fibroid. The abdomen was closed in the ordinary layer method and the patient went home perfectly well on the 22nd day.

The tumour weighed about 8 or 10 lbs. when fresh, and was solid except for a small cyst about the size of a fœtal skull. One portion of the tumour was considerably softer in consistence. The first portion of the tumour which was cut for examination showed a more or less regular field of round cells, which suggested a fibroid cut in cross section to the fibres, but the character of the section was not considered satisfactory by Prof. O'Sullivan, and two other portions were cut. These both showed a very irregular formation both in the density and distribution of the cells. In some fields the cells were closely packed, in others they were loose; the cells everywhere showed irregularity in size and shape, and many of the blood vessels were poorly formed, with thin walls and with the cells closely grouped around them.

The appearance of the sections is extremely like that described by Gebhart in his *Pathology*. He says that the diagnosis is to be made from the different grouping of the cells, in some places massed, in others thin, this often being particularly noticed around the vessels. Irregularity in the size of the cells is always seen, and some large cells irregular in shape and nuclei and staining properties. He says spindle-celled sarcoma is the only variety found pure.

This case I thought of interest not only from its pathology but even more so from the clinical aspect and from that of treatment. There is no doubt that the tumour existed for at least three years, and it is highly probable that it existed for more than five. It evidently took on more rapid growth during the last two years. At the time of operation there was nothing to raise the suspicion that the tumour was of a malignant character, either in the appearance of the patient or that of the tumour. I think the case illustrates the advisability of removing the other ovary in cases where solid tumours of the ovary are found, although the second ovary may not show any disease, particularly in women near the menopause. Any ill effects due to this would surely be compensated for by the greater safety against recurrence. I have only met one case, recorded by Wiggin,[11] of bilateral sarcomatous disease, but this should not alter the general principle in dealing with solid ovarian tumours. Goodall,[12] in a recent article on the epithelial origin of new growths in the ovary, shows how fœtal defects when existing in one ovary almost invariably exist in the other, and although this deals with the carcinomata and their origin, nevertheless the same may largely apply to the fibrous supporting tissue from which the sarcomata have their origin. There is also the parenchymatous cell of the ovary, which has been

shown to be of epithelial origin but which gives rise to the endotheliomata, which occupy an intermediate place between the carcinomata and the sarcomata, and which often show transitions in the one tumour to the two extremes, and aberrant types of the cells are very likely to exist in the two ovaries. It is possible that the parenchymatous cell is the chief origin of the sarcomata while the fibrous supporting tissue chiefly gives rise to the fibromata.

The difficulty or impossibility of making any naked eye diagnosis of a tumour should justify all solid tumours of the ovary in being treated as malignant at the time of operation. It is of interest that a tumour of this nature should grow to such a size as the one shown, and not have long ago given rise to metastases. Of course they may exist and show later, but I hope that the healthy condition of the patient is proof that the disease had not extended before being removed. It is now over four months since the operation, and the patient reports herself as in perfect health.

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An Early Case of Sarcoma Uteri.*

By Beckwith Whitehouse, M.S.,

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The second case that I bring before the Section forms almost the direct converse of the first, and concerns a specimen which to the naked eye appears to be a small fibromyoma undergoing degeneration, and yet under the microscope is a mixed cell sarcoma.

The specimen was obtained from a woman aged 50, a tertipara admitted to the General Hospital, Birmingham, under the care of Dr. Thomas Wilson, suffering from chronic inflammatory disease of the uterine appendages.

She complained of sub-acute hypogastric pain of some months' duration, but severe and necessitating rest in bed for the fourteen days previous to her admission to the hospital. The present acute attack had been precipitated by the administration of an enema. Her menstrual history had been quite regular until twelve months ago. Since then hæmorrhage had occurred every 14–21 days. The loss, however, had never been really profuse until shortly before admission to the ward.

The patient was not by any means anæmic and her chief trouble was the abdominal pain.

Examination of the abdomen showed considerable tenderness over the whole of the hypogastrium, and the fundus uteri was just palpable above the pubes, slightly to the right of the middle line. Bimanually, it was found that the uterine enlargement involved the fundus and posterior wall. The organ was also firmly fixed by an irregular inflammatory mass occupying both posterior quadrants of the pelvis, very tender and evidently in relation with the uterine appendages. Examination of the blood showed a leucocytosis of 14,000.

A diagnosis was made of double chronic salpingo-oöphoritis, complicated by a small fibromyoma uteri. Operation was undertaken primarily for the relief of the inflammatory condition, as the fibroid was apparently not causing marked symptoms.

The operation was performed by Dr. Thomas Wilson who, in accordance with his usual practice, removed the uterus after it had been necessary to sacrifice both appendages. The patient made an uneventful recovery.

* Read at the February meeting, Section of Obstetrics and Gynæcology, Royal Society of Medicine.

The specimen came under my notice when making the routine pathological examination of the gynæcological material obtained in the hospital, and on referring to the notes I find that I made the following report:—

Pathological Report. The specimen consists of the uterus and both appendages removed by the operation of total abdominal hysterectomy, the whole weighing six ounces.

The uterus is slightly enlarged and the posterior wall near the fundus shows a small prominence. The organ gives the following measurements: $3\frac{3}{4}$ inches by $2\frac{1}{4}$ inches by $1\frac{3}{4}$ inches. The peritoneal surface is for the most part smooth. Near the cornua a few adhesions are present, but these are not marked. The colour is pink with some scattered petechial hæmorrhages on the posterior surface. On section, the uterine wall shows considerable hypertrophy, the posterior wall near the fundus measuring $1\frac{1}{2}$ inches in thickness.

This increase in size is due partly to the presence of an interstitial, apparently encapsuled neoplasm, measuring $\frac{3}{4}$ inches in diameter. The growth is solitary and presents somewhat unusual characters. In colour it is yellowish pink and the consistence is soft and almost putty like. The tissue is homogeneous and appears to consist of a fibromyoma which has undergone some form of degeneration, the nature of which to the naked eye is obscure. The change has affected almost the whole neoplasm, and only the periphery shows the concentric arrangement of fibres seen in a normal fibroid. The rest of the uterine wall shows some increase of fibrous tissue, but no other neoplasms are present. The endometrium is smooth and normal. The cervical canal contains a small quantity of blood-stained fluid.

The appendages are not present on the specimen that I bring forward, because they were removed for a thorough microscopical investigation. The Fallopian tubes and ovaries showed the usual changes dependent upon severe and chronic inflammation. No sign of any neoplasm or metastatic deposit was present, however, in either appendage.

The microscopical report upon the uterine tumour states that the neoplasm consists of a small mixed cell sarcoma. A fibrous stroma is present, but the arrangement of the cells is nowhere of an alveolar type. The tissue is not markedly vascular and the few blood spaces appear to be lined by the tumour cells. The tubes and ovaries show marked inflammatory changes but there is no evidence of any metastasis.

The interest in this specimen lies in the fact that the nature of the neoplasm was discovered, so to speak, accidently. The uterus was in no sense sacrificed because of the tumour, and if the latter had occurred apart from the double chronic salpingo-oöphoritis, it is more than probable that its early recognition would never have

occurred. The symptoms due to the tumour were so slight and the growth itself was so small, that laparotomy for this cause alone was not indicated. At most, a myomectomy would have been attempted.

The specimen also raises the old question as to whether we are here dealing with an early fibro-sarcoma, or whether the case is one of sarcomatous development in a pre-existing fibromyoma.

My own view is that this and similar growths are fibro-sarcomata from the beginning. In the present instance there is no evidence in the patient's history that she had a neoplasm until about a year before she sought advice. Considering the general distribution of the sarcomatous cells throughout the tissue, it is highly probable that the tumour was then already malignant. Nevertheless, the rounded appearance of the growth, the absence of invasion of the surrounding uterine tissue by the sarcomatous cells, and the concentric arrangement of fibres at the periphery, are points that may well be brought forward in favour of the other hypothesis.

Fibromyoma of the Uterus Presenting Unusual Characters.*

By Beckwith Whitehouse, M.S.,

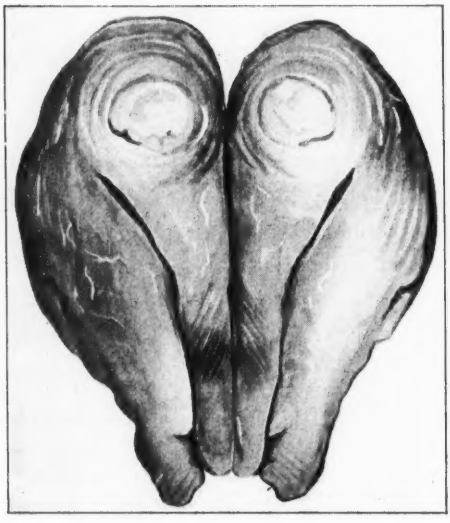
Assistant Obstetric Physician and Assistant Clinical Lecturer on Diseases of Women, General Hospital, Birmingham.

The patient from whom this specimen was obtained was a married woman, aged 40, admitted to the General Hospital, Birmingham, on September 11 1912, with a diagnosis of chorion-epithelioma of the uterus. This diagnosis was made chiefly upon the very interesting history of the patient supplied by her medical adviser, Dr. Boissier of Banbury. The following is an extract from a letter supplied by Dr. Boissier just previous to her admission to the ward: "The woman is the second wife of a small working farmer. She had been married a year when she thought herself pregnant. In September 1910, when she was considering herself in the fourth or fifth month, suddenly she had some hæmorrhage and passed a quantity of hydatidiform mole. I got all away and cleared out the uterus digitally. I sent up the specimen to the Clinical Research and enclosed is report. She made a good recovery and went on very well to about the beginning of the present year. I told her particularly to come and see me as soon anything appeared at all out of the ordinary. I have seen her from time to time since and all seemed well. Alas! she has not been to me for some time until lately. She has been suffering from menorrhagia evidently and metrorrhagia since January 1912. Now I find her uterus bulky and hæmorrhagic, so fear more serious trouble has begun to make headway."

The laboratory report from the Clinical Research Association Ltd. states that "this material is from a very typical hydatidiform mole. It presents the swollen chorionic villi, with myxomatous degeneration of the stroma, and a small amount of proliferation of the trophoblast. There is no evidence of malignant change."

On her admission to the hospital, the patient was well nourished but looked extremely anæmic. She stated that she had very little abdominal pain and that her chief trouble was continued and profuse uterine hæmorrhage and general debility. The bleeding began as a menorrhagia but for the last nine months had been practically continuous. On bimanual examination, the uterus was found to be

* Read at the February meeting, Section of Obstetrics and Gynæcology, Royal Society of Medicine.



uniformly enlarged to about the size of a small cocoanut. It was movable, not tender, and the os externum was small and closed.

An examination of the blood gave the following result:—

Red blood cells	3,033,330
Leucocytosis	10,930
Hæmoglobin	50 per cent.

Dr. Thos. Wilson, under whose charge the patient had been admitted, was at this time starting for the Berlin Gynæcological Congress, and he therefore placed her under my care.

On September 12 I performed a pan-hysterectomy and removed both appendages, not deeming it wise to leave the ovaries, with the suspicion in my mind of the presence of malignant disease in the corpus uteri. The patient made an uneventful recovery and is now in excellent health.

The specimen, shown in the accompanying illustration, weighs 12 ozs. It will be seen that the uterus is enlarged and has been incised through the anterior wall from fundus to os externum, exposing a large sessile polypoid tumour growing from the posterior wall and fundus. This tumour, which occupies the cavity of the uterus, presents an atypical appearance. It is ovoid in shape and may be roughly divided into two portions. The whole neoplasm measures $3\frac{1}{4}$ inches by 2 inches. The upper two-thirds is smooth, yellowish-white in colour and firm in consistence. It is slightly mottled on the surface with blood and near the broad attached base the tissue is slightly œdematous. It appears to be partly encapsulated. The lower smaller portion of the growth measures $1\frac{1}{2}$ inches by $1\frac{1}{4}$ inches and is separated from the upper part by a groove. It is conical in shape, rough and granular on the surface and dark purple mottled with yellow in colour. The purple colour is due to the extravasation of blood. There is no evidence of endometrium over the lower portion of the tumour, but traces can be seen over the upper larger and smooth part of the same. The endometrium at the fundus uteri surrounding the base of the tumour is thickened and creamy-white in colour. The cervix is normal in appearance. The right ovary contains a large corpus luteum but is otherwise normal. The left ovary also contains lutein tissue and is healthy. Both Fallopian tubes are normal.

The naked eye appearance of the tumour suggested to me that the condition was a fibromyoma undergoing sarcomatous change. There was after all no microscopical evidence of chorion-epithelioma in spite of the suggestive history.

Microscopical examination, however, shows that the neoplasm is quite benign and consists of a fibromyoma into which hæmorrhage has occurred and in which many of the vessels are thrombosed. The upper half of the tumour shows the structure of a typical slightly

œdematous fibromyoma. The lower polypoid portion exhibits large thrombosed vessels and diffuse hæmorrhage into the fibrous stroma.

A section taken near the attached base of the growth shows a considerable hypertrophy of the stroma cells of the endometrium, to the exclusion of the glandular elements. It is at first a little difficult to explain the presence of this somewhat embryonic tissue, but on tracing the same upwards its connection with the uterine endometrium is established by the occurrence in it of a few typical uterine glands.

I have brought this specimen before the Section because of the interesting history previous to operation, and also because the appearance of the tumour was such as to negative any expression of opinion as to its nature until a thorough microscopical examination of all parts of the growth had been conducted.

Torsion of the Spleen, illustrating the extreme degree of engorgement of the organ.

Reduced by two-fifths from the natural size.

Torsion of the Spleen Simulating Ovarian Tumour: Splenectomy: Recovery.*

By Beckwith Whitehouse, M.S., F.R.C.S.,
Assistant Obstetric Physician, General Hospital, Birmingham.

Cases of splenectomy are still of sufficient rarity to warrant recording, and therefore I bring the following instance forward in the hope that it may be of some interest to the members of this Society.

On October 29 1912 I was asked to see, in consultation with Dr. Nevin of Sparkhill, Birmingham, a young woman, aged 30, a 6-para, who complained of severe abdominal pain and inability to pass urine. Her health until August 1912 had been excellent in every way, but about that time she began to experience a dragging pain in the left side of the abdomen, in both shoulders and below each breast. She also experienced severe vomiting about the same period. A month later she had a similar but less severe attack. About five weeks before her present illness she fell off a chair on to her back and bruised the left thigh. At the time she did not pay much attention to this slight accident, but subsequently she suffered from irregular abdominal pain, and one week before I saw her an acute attack with vomiting occurred whilst at a theatre, and she had to be brought home in a cab. The pain subsided, and for a few days she was able to do her housework. Recurrence of the pain and vomiting compelled her to take to her bed, and Dr. Nevin was then called in for the first time.

I saw the patient the following afternoon. Her temperature was then 102°F., and the pulse-rate 120. The expression was anxious, and she was complaining of severe pain in the hypogastrium with urgency and difficulty of micturition. The abdomen was distended, rigid and acutely tender, especially in the right iliac fossa. A tumour was felt rising out of the pelvis and occupying the hypogastric region and right iliac fossa. The consistence of this tumour was firm and the upper margin rounded. No notch or irregularity could be felt.

Per vaginam, the cervix was reached with difficulty, the uterus being markedly retroverted. The anterior vaginal wall was tense, and through the anterior fornix the lower pole of the tumour could easily be felt, encroaching considerably upon the space usually occupied by the bladder. The physical characters of this part of

* Read before the Midland Obstetrical and Gynæcological Society, December 6, 1912. (Bristol.)

the tumour made me express some doubt as to its nature. It was hard, somewhat pointed and extended much more to the right side of the pelvis than to the left. The uterus could be moved very slightly, and was evidently distinct from the swelling, which appeared to be firmly impacted in the pelvis. I diagnosed a solid neoplasm of ovarian origin with torsion of the pedicle, and advised immediate laparotomy.

At the operation, the peritoneal cavity contained several ounces of blood-stained effusion, and the intestinal cords were much congested. On opening the peritoneum a very well-marked Meckel's diverticulum immediately presented. Firmly impacted in the pelvis and lying in front of the uterus was a large dark-purple tumour, fully half of which appeared to lie in the true pelvis. It was withdrawn with some difficulty, but was then easily and completely delivered outside the abdominal cavity. The tumour proved to be the spleen with a long and broad pedicle, which had undergone torsion through $3\frac{1}{2}$ complete twists. Areas of commencing necrosis and lymph were present on the surface of the organ, and it was decided to remove it. This was extremely easy as all the vessels were thrombosed, all that was necessary being to ligate and divide the gastro-splenic omentum and tail of the pancreas which was included in the pedicle.

The patient made an uninterrupted recovery, and is now to all appearance in the best of health.

Examination of the patient's blood taken immediately after the operation gave the following result:—Hæmoglobin, 65 per cent.; red corpuscles, 4,300,000; leucocytes, 13,760; polymorphonuclears, 72 per cent.; lymphocytes, 20 per cent.; mononuclears, 6 per cent.; eosinophils, 2 per cent. The red cells were well formed and showed no poikilocytosis.

A further examination conducted 13 days later gave practically the same results, viz.: hæmoglobin, 70 per cent.; red corpuscles, 4,300,000; leucocytes, 12,500.

The spleen, shown in the accompanying plate, weighs 2 lbs. 10 oz., and gives the following measurements: $8\frac{1}{2}$ in. $\times 5\frac{1}{4}$ in. $\times 3\frac{1}{4}$ in. The general conformation of the organ is well maintained, and the anterior border presents two well-marked notches. The surface, when fresh, was dark purple in colour with a much darker area due to extravasated blood on the convex outer aspect, near the upper pole. The whole of the superficial surface is studded with shallow depressions about the size of pin-points. On section the spleen is much congested, and when fresh was almost black in colour and soft in consistence from the amount of extravasated blood. This is most marked at the centre of the organ, and generally does not reach to the capsule, which measures $\frac{1}{4}$ in. in thickness, and is formed of comparatively normal splenic tissue.

The microscope shows simply that the tissue is in a much engorged condition, the spaces formed by the reticulum being packed with red cells.

On looking through the available literature I find that the first case of splenectomy is recorded in the *Transactions* of the Pathological Society for 1866, and was performed by Spencer Wells. Many instances have of course been recorded since, and the indications may be grouped under three headings, viz., (*a*) for rupture of the spleen; (*b*) for "wandering spleen"; (*c*) for leukæmia. Cases falling under the first two headings as a rule recover, and the patients experience no inconvenience from the loss of the organ. This is so with the case now published. When the spleen is removed for leukæmia, however, the patient almost invariably dies and the operation is unjustifiable.

The records of the "wandering spleen" under which category the present case falls, show many points in common, but attention should, I think, be directed to the following:—

1. That the majority if not all cases have occurred in the female. In the records that I have examined I cannot find a single reference to torsion of the spleen or "wandering spleen" in the male.

2. That almost invariably the lesion has been mistaken for some condition of gynæcological interest, the diagnosis in the majority of instances being that of ovarian neoplasm.

3. Not infrequently the tumour occupies the *right* iliac fossa and right side of the pelvis.

4. The uterus as a rule is retroverted, the lower pole of the spleen occupying the utero-vesical and not Douglas's pouch.

5. In almost all cases the blood shows a well-marked leucocytosis. This is progressive, and appears to be at its maximum several months after the operation.

In a case practically identical in most respects with the present one and recorded by Dr. Malins in the *Lancet* and *Transactions of the Obstetrical Society* for 1894 the report on the blood states that fairly large numbers of large white nucleated corpuscles, 30—50 μ diameter were present, in which were contained several red blood cells. In some 20 or more were noted. In individual ones the red cells appeared to be disintegrating, whilst small masses of blood pigment could be observed in those where the change was most marked.

So far these facts have not been noted in the case here recorded, which, of course, is still under observation.

REVIEWS OF CURRENT LITERATURE.

UNDER CHARGE OF EARDLEY HOLLAND, M.D.

LIST OF COLLABORATORS:

LONDON. Alban Doran, F.R.C.S.; S. Jervois Aarons, M.D.; J. Barris, M.B.; F. E. Taylor, M.D.; C. White, M.D.; J. A. Willett, M.D.; J. Wyatt, F.R.C.S.
EDINBURGH. Miss J. H. Filshill; R. W. Johnstone, M.D.; James Young, M.D.
GLASGOW. E. H. L. Oliphant, M.D.
ABERDEEN. W. R. Pirie, M.B.
MANCHESTER. J. S. Young, M.D.; J. Chisholm, M.D.
BIRMINGHAM. H. B. Whitehouse, M.S.
LIVERPOOL. H. Leith Murray, M.D.
SHEFFIELD. W. W. King, M.B.
DUNDEE. J. A. C. Kynoch, M.B.
CHELTENHAM. C. J. N. Longridge, M.D.

The inter-reactions of blood from man and woman.

LORIER, working in the laboratory connected with Ribemont-Dessaignes clinique at the Beaujon hospital describes (*Arch. mens. d'Obst. et de Gynécol.*, Nov., 1912) a preliminary series of observations. Nearly 600 contacts were made of blood from 52 men and 22 women: these last were all pregnant or recently delivered. Mixing the serums gave no obvious result: the corpuscles seem to be of little importance while the serum appears to have some characteristic dependency on sex. Thus in observations of female serum on the washed corpuscles of men and women agglutination occurred in both in less than 12 per cent., while the male serum agglutinated male and female corpuscles in 35 per cent. Lorrier intends to continue his researches with the blood of non-pregnant women and does not at present draw any definite conclusions but suggests that some cases of sterility may be due to some lack of this reaction. For example the blood serum of one nullipara gave no reaction with male or female corpuscles and her corpuscles gave no reaction to the serum of her husband which on the contrary agglutinated the corpuscles of men and of other women. He further suggests that the causation of eclampsia may possibly be found by working on these lines. E.H.L.O.

Kraurosis vulvæ.

VALLOIS and DELMAS (Montpellier) (*La Gynécologie*, Sept., 1912) describe and illustrate with photographs a case of kraurosis occurring in a woman of only 28 years of age. She was recently married and the atrophic and fibrous condition of the vulva had prevented intercourse or rather had prevented penetration: the orifice barely admitted the finger-tip, and that only with extreme pain. In spite of this the woman became pregnant and

was delivered with little difficulty after two lateral incisions had been made. These were stitched in such a way as to add to the size of the vulvar orifice and with the stretching of the parts by the passage of the fœtus it was hoped the woman would be in a better position to fulfil her reproductive functions. E.H.L.O.

Rupture of vagina during coïtus.

Victor Bonney (*Archives Middlesex Hosp. Clin.*, Series No. xi., Dec., 1912) writes a report of a case of interest both for gynæcological and medico-legal reasons. A woman aged 40 was admitted into the Middlesex Hospital last autumn with symptoms of peritonitis and a bloody vaginal discharge. He detected an aperture in the posterior fornix leading direct into the peritoneal cavity, and wide enough to admit a man's thumb. The edges of the wound were remarkably sharp and thin, and on digital exploration coils of intestine and the lower edge of the omentum could be felt. The patient was a multipara, and alcoholic in appearance, and also lean and weak. Criminal attempts at abortion were suspected, but the patient admitted that she had permitted coitus in the upright position the night before admission, when intoxicated. Great pain and much hæmorrhage followed, yet the patient returned home before she was sent into hospital. The abdomen was opened and a clean tear discovered in the anterior fold of Douglas's pouch about one inch from its floor. There was a considerable quantity of blood and coagulum in the pelvis, and early generalized peritonitis was present. The pelvis was cleaned and the rent closed with interrupted sutures. A big drain tube was inserted into the lower end of the abdominal wound, the remainder of which was closed by the usual three layer method. There were no complications and the patient was discharged cured on the twenty-fourth day. This case was an instance of a perforating rather than a lacerated wound of the vagina, inflicted by the direct impact of the intromittent organ and not by over-stretching. Bonney refers to the specimen in the museum of St. George's Hospital where the patient was seventy years old, recently married to a lifeguardsman; the injury proved fatal, it appears, within a short time. Bonney also notes Hofmann's report, with a drawing, showing a slit-like tear, over 1½ inch (4 cm.) long, in the right fornix posteriorly, perforating the peritoneum. The patient, a girl aged 19, died of peritonitis six days after the injury, and it was suspected, on insufficient grounds, that the wound was inflicted by the man's finger, indeed a small laceration bearing the impress of a finger-nail was detected on the left side of the vagina. Lacerated wounds of the vagina are usually the result of rape and chiefly involve the lower end of the canal which is the narrower and more likely to give way when stretched suddenly by a disproportionate body. Whilst in all the three instances of perforating wound above noted the peritoneum was involved, that complication is unusual in lacerated wounds inflicted in coitus. Independently of sexual injuries, laceration of the vagina, it must not be forgotten, is well known to occur in certain subjects, where its walls are thin. Bonney refers to one instance where the posterior wall was lacerated down to the peritoneum in the course of a vaginal examination carried out without undue force. A woman ruptured her vagina in endeavouring to reduce an acute prolapse which occurred when she was carrying a pail. The intestine protruded and the patient died. A multipara ruptured her vagina when carrying a heavy load; she recovered after operation. A.D.

Hot air treatment of metritis,

WILLETTE contributes (*La Gynécologie*, Oct., 1912) the record of a series of nine observations made in the clinique of Ribemont-Dessaignes. The treatment was apparently carried out by Vignat with his own special apparatus, but for lower degrees of heat where it is desired merely to produce hyperæmia and not to cauterize, any simple heat producer might be employed. Some cases of hot air cauterization of gangrenous or sloughing wound of the perineum led to its trial in inflammatory affections of the uterus and appendages. In case v for instance it is claimed that a salpingitis was cured more quickly than the observer had ever seen before after a temperature of 500° C. had ben used. The apparatus is costly and somewhat cumbrous and it is not easy to bring out-patients back sufficiently often to let them get the full benefit of the method. E.H.L.O.

Carcinoma of the cervix in a girl eighteen years old.

CRAIGIN (*Amer. Journ. Obstet.*, Jan., 1913) saw, in consultation, on April 26, 1912, a girl aged eighteen, who had been suffering for many months from neuralgia which had subsided, to a certain extent, after rest, the administration of ergot and other measures. A large cauliflower growth had been discovered and a portion removed for microscopical examination. Francis E. Wood, Director of the Crocker Cancer Research Laboratory, and F. E. Sondern pronounced the growth to be undoubtedly a carcinoma. On May 4, 1912, Craigin performed a radical abdominal hysterectomy after Wertheim's method. The patient made a good recovery and when seen on September 16, 1912, showed no evidence of any recurrence of the disease. Craigin reported the case as the youngest instance of carcinoma of the uterus he had ever seen.

[A description of the microscopical appearances would have been instructive. In Schauta's case the patient was 17 years old, the new growth was pronounced to be a malignant adenoma of the cervix, so it was with Ganghofner's patient, a child of eight. It is worth noting that in the drawing of the diseased cervix in Ganghofner's monograph ("Einer Fall von Carcinoma Uteri bei einem achtjährigen Mädchen," *Zeitschrift f. Heilk*, vol. ix, 1888, p. 337, and pl xiv, fig. 1) the new growth appears as a cauliflower growth, "eine vielfach papilläre aufsitzende Tumourmasse," as the author describes it. "A large cauliflower growth," in Craigin's report suggests squamous-celled carcinoma of the portio vaginalis. The youngest patient subject to this kind of tumour in Cullen's series was thirty-one years old. Most probably Craigin's tumour was an adeno-carcinoma or malignant adenoma.—REP.] A.D.

Necrobiosis of uterine myomata in pregnancy.

CHAVANNAZ (Bordeaux) (*La Gynécologie*, Sept., 1912) records two cases and gives details of the microscopic appearances of the tumours. One of these was sessile, entailing hysterectomy, the other was pediculate and was removed, but abortion followed. In the first case the tumour was easily shelled out and Chavannaz was about to stitch the wound when an assistant reported that section of the tumour revealed necrotic changes, so it was decided that the risk of leaving the uterus was too great to be incurred. Bacteriological examination of the tumour was not made. In the second case the necrotic process had not proceeded so far and no bacteria were found, either ærobic or anærobic: the cut surface showed pearly white

points and violet patches: the tumour maintained its fibro-myomatous character but the fibrous element was excessive: some of the arteries were thrombosed and leucocytic infiltration suggested inflammatory reaction. The nuclei in the affected patches stained badly, or in the more affected areas had entirely disappeared. The etiology is unknown and possibly pregnancy has little to do with the process. Other writers are quoted more especially Bland Sutton. The diagnosis is difficult and even when the tumour is exposed it may not on its surface show signs of necrosis. Early removal is advisable, for delay may lead to suppuration or gangrene.

E.H.L.O.

The difficulty of diagnosing ruptured extra-uterine pregnancy.

BEJAN (*Münch. med. Wochens.*, Jany., 1913). This condition is often undetected, and occurs more frequently than is supposed. It is only to be excluded when none of the characteristic symptoms are present. B. emphasizes the importance of noting rectal and vesical tenesmus. He points out the ease with which one can separate the uterus from the tumour and appendages which is not the case in inflammatory diseases of the appendages.

J.A.C.K.

Extra-uterine pregnancy with operation at term.

BOQUEL (Angers) (in *Archives Mens. d'Obstét. et de Gynécol.*, Nov., 1912) describes in detail the case of a woman whom he attended from the very beginning of pregnancy. She had attacks of pain commencing a fortnight after her last period: these were at first ascribed to retroversion caused by a fall, to colic, to renal colic, to appendicitis, to interstitial pregnancy and later to cornual pregnancy, and it was not till the 7th month that the diagnosis was established by the superficial situation of the fœtus. The pregnancy was however allowed to progress in the expectation of obtaining a viable child. Labour supervened prematurely and operation was performed as an emergency in the middle of the night. Boquel, basing his opinion on the statement of Potocki, believed that the placenta in tubal pregnancy is supplied by the uterine and ovarian arteries alone: he had indeed seen large vessels in the omentum which formed part of the sac wall but thought them venous. Accordingly he temporarily clamped the utero-ovarian vessels and proceeded to remove the placenta, but copious hæmorrhage endangered the patient's life. It was found that this came from a third lobe of the placenta that had been overlooked. This was rapidly stript off and was found supplied by large vessels running in the sac wall from the vessels of the omentum. These were at once tied and the patients, mother and child, ultimately did well. With this warning that vessels must be looked for in the sac wall as well as in the broad ligament, Boquel is of opinion that it is better to risk the hæmorrhage than to leave the placenta marsupialized. Firmly adherent portions of the sac wall are best left in situ. Boquel is to be congratulated on the success of his case and is to be complimented on his frank confessions of faults in technique due to the hæmorrhage occurring in an emergency operation. E.H.L.O.

The use of narkophine in obstetrics.

JASCHKE (*Münch. med. Wochens.*, Jany. 14, 1913) has found this preparation of opium reliable. He reports his experience of it in 45 cases. The pulse and respiration were unaltered, and in one case only were the

fœtal heart sounds weakened, necessitating the use of the forceps. In six cases after the administration, the pains became so weak that is was necessary to give pituitrin. In two cases the action of narkophine was unsatisfactory. In the majority of cases the patient fell into a pleasant drowsy condition, the uterine contractions continuing quite strong and effective. No post partum bleeding was noted during the puerperium. J.A.C.K.

Separation of the normally inserted placenta during pregnancy.

ZAHARESCU (*Münch. med. Wochens.*, Jany., 1913). This serious complication has occurred in the Bucharest Hospital once in 1706 confinements. The cause is feeble attachment of the placenta to the uterine wall, brought about by defective nutrition, *e.g.*, syphilis, tuberculosis, typhoid, endometritis, albuminuria. The general condition, in such cases, is unsatisfactory. There is always abdominal pain and frequently, external hæmorrhage. The prognosis is bad. In the early months abortion takes place; in the latter months, danger arises from hæmorhage, delayed labour, and inertia of the uterus. Death of the mother occurs in 30 per cent. of the cases. Only about 5 per cent. of the infants live. Regarding treatment, Z's experience shows that rupture of the membranes is of use only in the mildest cases; whereas dilatation of the cervix, by means of Champetier de Ribes bag, followed by turning or forceps, can be recommended for more serious cases. Cæsarean section must be performed in the gravest cases. J.A.C.K.

A case of spontaneous rupture of the uterus during pregnancy.

BEYER (*Münch. med. Wochens.*, Jany., 1913) refers to the rarity of such cases in the early months of pregnancy, as compared with the later months. He reports the case of a patient 20 years of age. The first pregnancy had run a septic course. In the early months of the second pregnancy the patient was suddenly seized with vomiting and severe abdominal pain. On admission to hospital the patient looked pale, was restless and showed all the symptoms of internal hæmorrhage. Pulse was 134. Immediate abdominal section was performed. On opening the abdominal cavity a fœtus, measuring 17 cms. was found, which had escaped through the fundus of the uterus. The question of sewing the wound was put aside in favour of total extirpation of the uterus. The fœtus corresponded to a four months' pregnancy. The patient made a good recovery. Microscopic examination of the uterine wall showed great thinning of the connective tissue. There was no hyaline degeneration of the muscular fibres noted. B. discusses at some length the causes of such a rupture. He favours the possibility of some alteration in the uterine wall being set up by manual removal of the placenta at a previous confinement. He thinks the symptoms of intestinal obstruction were due to adhesions between the intestines and the inflamed and altered site upon the uterus. J.A.C.K.

The diagnosis and treatment of premature rupture of the membranes.

ZAHARESCU (*Münch. med. Wochens.*, Jany., 1913). Premature rupture is not uncommon and may occur in the cervix or higher up in the uterus. In the latter case, a partial closure of the tear may occur in consequence of the pressure of the adjacent uterine wall. The accident is of importance for the course of pregnancy and for the confinement. The child may die and

the uterus may become infected on account of numerous examinations. Labour is delayed, necessitating often the application of the forceps. Prolapse of the cord occurs frequently which requires forceps or internal version. Z. points out the necessity of watching fœtal heart sounds to determine the right time for interference. J.A.C.K.

Bougie removed from abdominal abscess ten weeks after introduction per vaginam by patient to induce abortion.

DOUGLAS (New York) (*Amer. Journ. Obstet.*, Jany., 1913) relates a remarkable instance where a woman, aged 26, was admitted into hospital with a tender swelling in the abdominal wall over the outer edge of the right rectus on a level with the umbilicus. She said she had struck herself against a chair two months previously. She had borne three children, but one year before admission a midwife induced abortion with a lisle-thread bougie nearly a foot long and gave it to her in case it should be wanted again. Ten weeks before Douglas examined her she passed the bougie into the uterus, as the periods were two weeks overdue, and introduced a cotton tampon into the vagina, which came away a few hours later at stool, and the patient wrongly thought that the bougie slipped out unobserved. Beyond the painful swelling no other symptoms developed during the ten weeks. Douglas laid open the swelling which was a well-circumscribed abscess cavity holding two ounces of pus which smelt as in bacillus coli infection. The bougie lay coiled up in the cavity and was extracted, the cavity being drained. Uterine hæmorrhage occurred a day later; the patient it must be noted, already showed, when admitted, all the signs of pregnancy at the third month. Yet it was not until the eleventh day that abortion set in, with pain and free hæmorrhage, a three months' fœtus coming away on the following day. The curette was applied and the patient left hospital cured a week later. A.D.

Serum treatment in melaena neonatorum.

FRANZ (*Münch. med. Wochens.*, Dec., 1912) reports on 35 cases that occurred in the Gratz Frauenklinik between 1900 and 1911. The mortality in 17 cases was 52 per cent. Such remedies as ergot, hydrastis, alum, ice, and saline injections have been given up. Gelatine in a 2—5 per cent. sterilised solution is now the popular remedy. Eight cases so treated in the Gratz Klinik showed a mortality of 62·5 per cent. F. divides the cases into (1) Idiopathic melæna, where intestinal bleeding is the only symptom; (2) Secondary melæna, where the condition is associated with some other disease such as sepsis, syphilis, and hæmorrhagic diathesis. Weil was the first to use injections of fresh blood for hæmophilia, with good results. It has been proved by experiments on animals that serum has a coagulative effect on blood as reported by Baum. F. reports six cases in which he injected from 10—25 ccm. of blood serum from the umbilicus cord. All the cases were cured and in four the good effect was remarkably quick. He describes his method of obtaining the serum and of administering it. He always injected the serum subcutaneously; the intravenous injection not being so suitable for newly-born infants. He never noted any bad effects. His paper is illustrated by charts indicating weight and temperature of child. J.A.C.K.

On late infection in ophthalmia neonatorum.

CREDÉ-HORDER (*Münch. med. Wochens.*, Jany., 1913). Twenty per cent. of such cases are called "late infection" because it does not appear till at least five days after confinemnet. Up till now all such cases were regarded as being due to indirect contagion as for example, by the hands of the mother, or of the nurse, or from the infant's clothing. H. tries to explain those cases of late infection where the child had been removed from the mother immediately after birth. He reports two cases, one where the infection appeared 11 days, and the other 12 days post partum. Those two cases prove, he thinks, that the gonococcus may get into the eye during labour, and that the ordinary period of incubation may be prolonged without any symptoms showing themselves. He believes that the condition of the eyelids is specially favourable for the activity of the gonococcus.

J.A.C.K.

REPORTS OF SOCIETIES.

ROYAL SOCIETY OF MEDICINE.

Section of Obstetrics and Gynæcology.

Meeting held Thursday, January 2, 1913, the President, Dr. Amand Routh, *in the Chair.*

A paper entitled

Adeno-myoma of the Recto-uterine and Recto-vaginal Septa

was read by Dr. Cuthbert Lockyer. The author first remarked upon the rarity of new growth arising in the connective tissue space which intervenes between the rectum on the one hand and the uterus and vagina on the other; he could find no mention of such a case in the 49 volumes of Transactions of the Obstetrical Society of London. He then described in detail a case which had come under his own observation. The patient was a sterile married woman, æt. 35; for the previous twelve months menstruation had been excessive; there was a good deal of pain in the rectum, which was worse at night, and latterly the act of defæcation had become difficult. There had been no bleeding from the bowel. On examination, a hard mass was felt in the posterior fornix, which was attached to the supra-vaginal cervix and projected into the lumen of the rectum, the rectal mucous membrane covering it being intact. The vaginal cervix was normal.

Laparotomy showed that the body of the uterus and the appendages were normal, there was no cellular infiltration, and the growth, which was below the peritoneal reflection, was firmly fixed to both rectum and uterus. The ureters were first dissected out, the left one being firmly incorporated with the growth; then the uterine arteries were tied and the parametric tissues divided as far out as possible. The bladder was then separated and the anterior vaginal wall divided. Next the rectum was divided between clamps above the growth, freed as low down as possible and again divided, along with the posterior vaginal wall below the growth. The lower end of the rectum was closed, and the upper end fixed in a separate opening in the left iliac region. Supra-pubic and vaginal drainage was employed. The patient made a good recovery.

Microscopic examination showed the growth to consist of dense fibro-muscular tissue, in which were sparsely scattered simple gland tubules surrounded by cellular tissue similar to that found around the tubules in an adeno-myoma of the uterus. Histologically, it is comparatively benign. The author suggests that the growth may have originated in some vestigial remains of the Wolffian duct.

An epidiascopic demonstration on the lighting of Continental operating theatres was given by Dr. Macnaughton Jones; and short communications upon

Cases in which a Foreign Body was Removed from the Abdomen by Laparotomy

were read by Dr. Russell Andrews and Dr. G. F. Blacker.

ROYAL SOCIETY OF MEDICINE.

Section of Obstetrics and Gynæcology.

Meeting held Thursday, February 6, 1913, the President, Dr. Amand Routh, *in the Chair.*

A paper entitled

Red Degeneration of Uterine Fibromyomata

was read by Prof. Lorrain Smith (Edinburgh) and Dr. Fletcher Shaw (Manchester). The authors based their conclusions upon the examination of 24 specimens, all characterised by their red colour; in other respects there were differences, and they therefore divided them into two groups, one in which thrombosis was the principal change (thrombotic group), and another in which there was no thrombosis, but a marked increase in blood-vessels so numerous as to warrant this non-thrombotic group being regarded as angiomatous degeneration.

The thrombotic group contained 15 out of the 24 specimens described; they were all associated with definite clinical symptoms, they were coloured a deep red, and showed no free blood on their cut surface. In a few specimens all the vessels appeared to be filled with thrombi; in the majority only a portion of the vessels was thrombosed. Most of the specimens showed the red coloration throughout; in some the coloration was partial only, and in a few it was limited to the neighbourhood of the thrombosed vessels. The clinical symptoms met with included abdominal pain and tenderness of the tumour, rapid increase in size, fever and rapid pulse. Micro-organisms were only found in a few cases, and in all of them clinical symptoms of some severity were present. All the tumours were found to contain fat in the tissues, and, following Leith Murray the authors believed the red coloration to be due to the hæmolytic action of lipoid bodies. Of the 15 specimens in this group six were clinically associated with pregnancy or the puerperium.

The non-thrombotic group (angiomatous degeneration) contained 9 specimens. These tumours were of a bright red colour and showed free blood on their cut surface. All showed the presence of large numbers of thin-walled vessels of microscopic size filled with blood, the red colour being due to the presence of these vessels. In only one specimen was much fat found, and this was of a dark red colour, as in the thrombotic group. None of the patients showed definite clinical symptoms other than hæmorrhage and pressure.

A paper entitled

The Cause of Internal Rotation of the Fœtal Head

was read by Dr. James Young (Edinburgh), and illustrated by models and by an epidiascope demonstration. The author formulated the view that a firm cylindrical body, closely fitting a curved cylindrical canal, when forced along that canal continually changes its position; the lower end, in contact with the posterior wall of the canal, is carried continually forward as the body descends. The application of this view to the descent of the head in occipito-anterior and occipito-posterior positions was discussed and illustrated by the original models constructed by the author.

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

Meeting held in Manchester, January 17, 1913, Dr. W. E. FOTHERGILL (President) in the chair.

Dr. H. R. CLARKE (Manchester) showed a specimen of

UTERINE ENDOTHELIOMA.

Mrs. B., æt. 43. The microscopic sections I wish to bring to your notice to-day are from an endothelioma of the uterus.

The uterus measured 9 c.m. × 7 c.m. × 3·9 c.m., was harder than normal and had a thickened mucous membrane. There was a unilocular cyst of the left ovary 5 c.m. in diameter. The other ovary was normal.

The endothelioma arose from the mucous membrane of the anterior wall of the uterus near the entrance of the left tube. The growth measured 1·3 by 1·3 c.m., its surface was somewhat irregular.

Microscopically it consists of nucleated cells of endothelial type, which tend to be arranged in columns. The cells are supported by a fibro-cellular stroma, and scattered among them are larger cells of decidual type with large nuclei and blood vessels.

Sections of the uterus at the site of the growth showed that the fibrous tissue was generally increased in the arteries and that the veins were somewhat dilated.

The tumour probably arose from the endothelium of the capillaries of the mucous membrane.

The endotheliomata have a mesoblastic origin and arise from the lining endothelial cells of lymphatics, blood vessels or serous membranes.

From the arrangement of the cells in cylinders the term cylindromata has been applied to these tumours. They run a slowly malignant course and secondary deposits in glands or viscera are after a time developed but the rate of dissemination is not great.

Obliteration takes place in the blood vessels from proliferation of the endothelium in some cases and in such, hyaline degeneration is liable to take place in the cells of the tumour.

Dr. WALLACE (Liverpool) showed lantern slides from three cases of

CHORION-EPITHELIOMA

which he described at the last meeting of the Society.

Dr. MORITZ (Manchester) read a paper

ON THE SO-CALLED LIGAMENTS OF MACKENRODT,

illustrated with lantern slides, which appears as an original article in the JOURNAL.

Dr. WALLACE (Liverpool) said this account tallied with what he found in the operating theatre. There is a band of tissue on each side of the cervix

which Dr. Wallace calls para-cervical tissue and to which, he supposes, Mackenrodt has fixed his name: in reality they are bundles of vessels and para-vascular tissue. He considered the utero-sacral ligaments to be definite entities and worthy of more notice than they had obtained from Dr. Moritz. When ventral-fixation is done for retroversion and prolapse, the cervix is sometimes found immediately behind the vaginal ostium, the uterus itself hanging vertically downwards from its attachment to the parieties. In these cases shortening of the utero-sacral ligaments was requisite, in addition to ventri-fixation.

Dr. WILLETT (Liverpool) congratulated the Society on Dr. Moritz's paper. He had never been able to distinguish Mackenrodt's ligament from the pelvic peri-vascular fascia.

Dr. STOOKES (Liverpool) thought the meeting ought to express its appreciation of the beautiful specimens shown by Dr. Moritz. These sections clearly showed the connection of the parametrium around the uterus and rectum. This was a very important point: he had seen a few cases of pelvic hæmatoma causing much thickening around the rectum as low as the anus, this was a point to which Lawson Tait had called attention long ago.

Dr. CLARKE (Manchester) in studying sections of fœtal pelves had been impressed by the presence of large papillæ in the vaginal wall, and by the rugose and relatively thick wall of the bladder which were so well shown in Dr. Moritz's sections.

Dr. FOTHERGILL (Manchester) said he wrote a paper some years ago which he hoped had exploded the myth of Mackenrodt's ligament: still it kept cropping up, but he hoped it was now finally dispatched. Dr. Fothergill considered the utero-sacral ligaments, which Dr. Wallace operates upon, to be simply part of the parametrium surmounted by a fold of peritoneum. Shortening the utero-sacral ligaments was one way of bringing the cervix back, but he preferred to do this by bringing the lateral parts of the parametrium together in front of the cervix while performing an extensive anterior colporrhapy.

Dr. STOOKES (Liverpool) read a paper on

SOME POINTS IN THE PUERPERAL MORTALITY.

After the publication of Dr. Arnold Lea's magnificent monograph on "Puerperal Sepsis" most of us may feel that little more can be said on that subject. But the Registrar-General's report for 1910 tells us that 1274 cases of death occurred in that year from sepsis. 1·4 per 1000 births. It is acknowledged that sepsis in hospital practice is much less than in private practice. I therefore venture to bring before you some very striking facts with regard to the puerperal mortality from sepsis in Liverpool.

Since the introduction of the Midwives Act in 1902 there has been a 30 per cent. reduction in the septic deaths in England and Wales, in 1900 the death rate wac 2·1 per 1000 births, it was 1·5 in 1909, 1·4 in 1910.

In Liverpool the death rate in 1902 was 1·07 per 1000 births, in 1910 ·39 per 1000, in 1911 ·93 per 1000. =·66 for those three years.

For the last ten years this deathrate has averaged 1 per 1000, while England and Wales averaged 1·7 per 1000.

What accounts for these favourable statistics in Liverpool, a city with

one of the highest general death rates in the country and with a dense and poor population?

Dr. Hope in his annual report gives us interesting figures from which I think we can make some valuable deductions.

In 1911 74·21 per cent. of all births in Liverpool were delivered by women, and only 114 of these 16,693 births were attended by uncertificated women. In that year in Liverpool there were 52 cases of puerperal sepsis notified, 21 of them died, equal to a mortality of ·93 per 1000 births in the City.

In the practice of the women there were 32 notifications with 10 deaths, a mortality about ·59 per 1000 births.

5800 cases were attended by doctors, 21 cases with 11 deaths, about 1·8 per 1000 cases.

If we examine the Table we find that in the time these statistics have been collected there has been in Liverpool a greater proportion of fatal cases of sepsis among women attended by doctors than among those attended by women.

Dr. Hope's figures show that in Liverpool the amount of obstetric work done by the doctors is small and is diminishing, in fact midwifery is a decaying industry so far as the medical profession is concerned, it is no longer the backbone of the practice.

We need further explanation of these facts and they have been given in part by Dr. Hope himself, he pointed out that in 1905 only 15 per cent. of the cases attended by women in Liverpool were by uncertified women, this proportion of cases attended by uncertified women has now almost vanished.

In England and Wales as a whole half the women were then uncertified.

It is not only for the years since the Midwives Act passed but for many years that Liverpool has had a lower puerperal death rate than England and Wales, and I believe the explanation is that for many years Liverpool has had an active training and examining school for midwives.

The figures show that since 1905 the death rate per 1000 births attended by midwives averaged ·58, while in doctors' cases it was ·98 per 1000.

Dr. Lea in his excellent monograph says "that whenever a doctor is called in, some complication exists, which may require interference, hence these figures may be regarded as representing the cases of infection after complicated labour." I think the statistics of our complicated cases in hospital prove that explanation is not sufficient. Later, he says, "there can be little doubt that the introduction of chloroform has been accompanied by a distinct increase in puerperal mortality," and in that I quite agree with him as chloroform implies operative procedure of some kind.

Dr. G. Geddes has published an ingenious thesis in which he tries to prove that puerperal sepsis is correlated with accidents, that in districts where many accidents occur the doctor who attends them carries infection to the lying-in patients. We shall all agree with him so far that any one attending suppurating cases and confinements together is pretty sure to have trouble. Dr. Geddes is puzzled to find Liverpool and Bootle have a lower rate than Manchester and Salford. He explains the Welsh notorious septic rate by the fact that midwives abound in the Principality. If he will examine Dr. Hope's returns I think he will conclude it is the quality of the midwife that is at fault.

Why is the doctor in Liverpool less successful than the midwife? Because he is badly paid and as there are so few cases he is not sufficiently in touch with his work. The time seems to me to have come when it would be better for the General Practitioner to give up his midwifery altogether except when called in by a midwife; he is then at least paid a fee, no doubt inadequate but at least certain, and in many cases for one attendance he is paid as much as he would be for the whole care of the patient throughout her lying-in. No man can live by midwifery alone, and I think most of us must have felt the temptation when morning comes, and there is not much progress and we know other work is waiting, to put on forceps and get the labour over.

Dr. Ferguson in his Presidential address to the Edinburgh Obstetrical Socitey gives some most interesting facts with regard to Scotland and to Glasgow more particularly. In Scotland there has been a diminution in the sepsis mortality but an actual increase in the other causes of puerperal mortality. I would suggest that this is due to a general cause, that is the increasing prevalence of rickets due to the alteration in food habits and the crowding into towns. Glasgow has an appalling amount of rachitic deformity which is as obvious in the streets as in the statistics of its able school of obstetricians.

Dr. Ferguson, quoting the returns of the M.O.H. of Glasgow, shows that 54 per cent. of cases are there attended by midwives and their sepsis mortality is 7·3 per 1000, very different from Liverpool's ·6 per 1000.

I think I can claim to have shown that the exceptional condition in Liverpool is due to midwives attending most of the cases, to the advantages they have had for years of training, examination and supervision, with a backing of skilled help. I believe that when midwives are working under those conditions they will get better results than general medical practitioners attending all sorts of diseases. May I here say that I hope I show just cause for the Manchester examining centre of the Central Midwives Board to exact a high standard from all candidates applying for certification. It is a matter of every-day experience that teaching follows the standard of examination.

Dr. Arnold W. W. Lea thanked Dr. Stookes for referring to his monograph on "Puerperal Infection" with reference to his figures of puerperal infection mortality.

Dr. Lea said that the statistics given on pages 17, 18, and 19 as to the death-rate from childbirth, in England and Wales, include all deaths from septicæmia, pyæmia, puerperal fever, and phlagmasia dolens, and in recent years peritonitis occurring in women, within one month after labour. The Accidents of childbirth include deaths from abortion and miscarriage, puerperal convulsions, mania, placenta prævia, post-partum hæmorrhage, and other accidents of pregnancy and labour, such as tubal gestation, rupture of the uterus, and accidental hæmorrhage, also some cases of pelvic deformity (or deformity of child).

The accidents of childbirth from 1847 to the end of the year 1907.

Average: 23·5 per 10,000.

The mortality of puerperal infection during the same time averages 20·5 per 10,000. These statistics are given by Dr. Boxau up to 1903. After that, from the Reports of the Registrar-General.

PUERPERAL MORTALITY IN LIVERPOOL AND ENGLAND AND WALES COMPARED AND MIDWIVES' CASES COMPARED WITH DOCTORS' CASES.

	Mortality per 1000 births.				Midwives cases.							
	England & Wales		Liverpool									
Year	Total	Sepsis	Sepsis	Total	Births	Sepsis notified	Sepsis deaths	Rate per 1000	Births	Sepsis notified	Sepsis deaths	Rate per 1000
1900...	4·81	2·1	0·97	2.8								
1901...	4·73	2·2	0·96	3·0								
1902...	4·47	2·1	1·07	2·5								
1903...	4·06	1·7	0·92	2·7								
1904...	3·88	1·7	1·11	3·4								
1905...	4·19	1·8	1·32	4·4	15080							
1906...	4·01	1·8	1·12	3·4	15000	39	13	·86	9123	44	14	1·5
1907...	3·83	1·5	0·52	2·8	14446	35	10	·69	9208	20	2	·2
1908...	3·57	1·4	0·67	2·0	16522	22	7	·43	7269	29	8	1·1
1909...	3·70	1·5	0·89	2·5	16996	34	9	·53	6595	26	11	·7
1910...	3·56	1·4	0·39	1·9	17257	24	5	·29	5797	17	4	1·8
1911...			0·93		16693	32	10	·6	5800	21	11	1·9
								58	Average Death Rate from Sepsis per 1000 Births			·98

The total mortality from puerperal disease in England and Wales, during the years 1904, 1905, 1906, and 1907, was as follows:

Total number of births	3,728,435
Deaths from puerperal infection	6,493
Deaths from accidents of childbirth	8,356

Secondly, with regard to Dr. Geddes' figures quoted by Dr. Stookes.

They were published for Liverpool, Manchester and Salford for 1905.

1905. Liverpool. Births per 1000, 33·1. Puerperal mortality, 2·6 per 1000.

1905. Manchester. Births per 1000, 26·9. Puerperal mortality, 3·8 per 1000.

1905. Salford. Births per 1000, 31·8. Puerperal mortality, 3·1 per 1000.

Since the Midwives Act was passed in 1895 the mortality in Manchester from puerperal disease has gradually become reduced.

PUERPERAL MORTALITY IN THE MANCHESTER AREA, AS SHOWN BY THE NUMBER OF ADMISSIONS TO MONSALL FEVER HOSPITAL.

1908. 69 cases of puerperal infection were admitted to the Monsall Hospital. 14 fatal cases. The mortality amounted to 13·9 per cent.

1909. 54 cases of puerperal infection were admitted. The mortality amounted to 27 per cent.

1910. 75 patients were admitted, which is 21 more than in the previous year. 16 patients died, giving a mortality of 19·7 per cent.

"In nearly half of the cases the infant was admitted, with the mother. Although it is undoubtedly a proceeding to encourage, much extra work is thrown on the nursing staff."

Dr. WALLS (Manchester) asked how Dr. Stookes separated the cases into doctors' and midwives' cases? Serious cases were sent to the doctors by the midwives: these were the ones which so often went septic and it was unfair to label them doctors' cases, when the midwife had previously examined them.

Dr. STOOKES said he had not intended to make any invidious comparisions between Liverpool and Manchester. The point he wished to bring out was that Liverpool has a very low puerperal mortality rate in spite of a large general death rate. No case was labelled a doctor's case if it were first attended by a midwife. Dr. Stookes held that the good result of the cases attended by Liverpool midwives was largely due to the training and the examination the midwives had to pass along with the careful supervision of their work by the Health Authority.

The office-bearers for 1913 were elected.

MIDLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

Meeting held at Bristol, December 6th, 1912.

DR. WALTER SWAYNE, Vice-President, in the Chair

DR. PURSLOW exhibited a specimen of

TUBAL GESTATION SHOWING BOTH THREATENED ABORTION AND RUPTURE.

The patient from whom the specimen was removed by abdominal section was admitted to the Queen's Hospital on March 19th, 1912, with the following history:

She was 37 years of age and the mother of 9 children: there had been no abortions, the last child was born two years previously and all the labours had been normal. There was no history of previous pelvic trouble.

Five days before admission she commenced to menstruate, the period not being due until one week later: two days after she was seized with abdominal pain on the left of the umbilicus, vomited and fainted. She went to bed and remained there until the day of admission, the symptoms meanwhile subsiding. On March 19th at 5 p.m. she had a much more severe attack of the same symptoms and came up to the Hospital where she was admitted at midnight. She then presented the typical signs of severe internal hæmorrhage. Operation was performed and she made a good recovery.

The interest of the case lies in the specimen. This shows a dilated Fallopian tube, the fimbriated extremity being open and a mass of blood clot protruding through it. On the upper aspect of the tube, about its centre, there is a rent through which a fœtus of about eight weeks development, in its unruptured amnion, is protruding.

It seems probable that the first attack was due to hæmorrhage from the fimbriated extremity (threatened tubal abortion) and that the second and more severe attack was due to rupture of the tube.

DR. PURSLOW also showed the specimen and read the notes of a case of

HYSTERECTOMY FOR NECROBIOTIC FIBROMYOMA DURING THE PUERPERIUM.

The patient was first seen in consultation with Dr. Mitchell of Old Hill, and Dr. McQueen. She was then in active labour at full-term and the passage of the fœtus was arrested by a large fibroid in the uterine wall. The os externum was dilated but encroached upon by the tumour. The patient was placed under an anæsthetic and the hand could then be passed through the os and round the tumour and the foot of the child could be reached. The whole of the anterior and right wall of the uterus and cervix was occupied by the neoplasm, larger than a fœtal head and of firm consistence. A careful examination gave no evidence of life in the fœtus. Cæsarean hysterectomy was discussed, but as removal to hospital would have taken some time and there was consequent danger of rupture of the uterus, it was decided to proceed with delivery per vaginam.

Traction was made upon the leg and the child gradually extracted, much difficulty being experienced with the arms. The hand was then passed up into the uterus and the placenta removed, the uterine cavity being well washed out at the end of the operation.

The patient made an afebrile recovery and in the fourth week of the puerperium she was removed to the Queen's Hospital. Laparatomy was performed and, as the tumour was found to invade the cervix down to the external os, the uterus was removed by panhysterectomy. The patient made an uninterrupted recovery.

The specimen shows a fibroid the size of a 4½ months' gestation occupy-

ing the anterior and right wall of the uterus and bulging into its cavity. On section, the tumour shows well marked red degeneration.

A discussion followed upon the pathology of Necrobiotic Degeneration in Fibroids, in which Professor Walker Hall, Mr. Beckwith Whitehouse and Dr. Rayner took part.

Dr. Walter Swayne showed the specimen and read the notes of a case of Spontaneous Rupture of the Pregnant Uterus.

The patient, a multipara aged 37, had been curetted two years' previously on account of a septic incomplete abortion.

She was about 38 weeks pregnant.

About 3-30 a.m. on the morning of July 30th, 1912, she sent for one of the midwives on account of sudden acute abdominal pain. She was found to have a small weak pulse of 140 and was obviously suffering from severe shock. She was admitted to the Bristol Royal Infirmary and as her condition was becoming worse a provisional diagnosis of concealed accidental hæmorrhage was made and Cæsarean section decided on. On opening the abdomen, the fœtus contained in the unruptured amniotic sac was found lying in the peritoneal cavity, which was full of blood and clots. The membranes passed through the opening in the fundus into the uterine cavity from which the small portion not extruded was easily withdrawn. The uterus was drawn into the abdominal wound and removed by Porro's operation, it was well contracted and there was sufficient dilatation of the internal os to admit one finger with ease.

The patient expired as the last sutures were inserted in the abdominal wall.

The specimen consists of the body of the uterus which has been amputated just above the internal os, showing at the fundus an irregular stellate laceration involving the whole thickness of the uterine wall, the opening into the cavity nearly admitting three fingers. On microscopical examination of the edge of the laceration no cicatricial tissue was found.

Mr. Christopher Martin thought that the case was probably one of hernia of the ovum through the scar left by perforation of the uterus at the previous operation. He referred to the softening of the tissues in the puerperal uterus and remarked how easy it was to perforate the organ.

Dr. Newnham referred to the very rare occurrence of spontaneous rupture of the uterus and thought that this specimen was almost unique. He recalled one case many years ago, reported before the old Obstetrical and Gynæcological Society, where uterine rupture had followed the antepartum administration of ergot.

Dr. Edge mentioned a case in which prolapse of a small portion of omentum had occurred through the perforation in a uterus caused by a curette. Should such an accident occur it must undoubtedly cause a weakness in the uterine wall.

Mr. Beckwith Whitehouse asked if any increase of fibrous tissue was present in the wall of the uterus shown by Dr. Swayne. A condition of fibrosis uteri would favour uterine rupture.

Professor Walker Hall stated that he had examined sections of the uterus exhibited and had failed to find any abnormal increase of fibrous tissue. He suggested that the rupture was the result of degeneration secondary to arterio-sclerosis.

Dr. Edge read a short communication upon "Delayed Chloroform Poisoning in a case of Hysterectomy for Fibromyoma Uteri."

Mr. Christopher Martin referred to the great lack of knowledge that

exists at present with regard to this subject. He thought that many cases so called were really examples of acute sepsis and asked if any bacteriological examination of the blood had been made in Dr. Edge's case.

Dr. Purslow remarked that recently he had had a case of complete aphasia supervening directly upon a small operation on the vaginal wall, and he wondered if this was due to the anæsthetic employed.

Professor Walker Hall thought that Dr. Purslow's case of aphasia was possibly due to angio-neurotic œdema. The physiology and pathology of temperature and fever is very little understood at present, and undoubtedly this accounts for some of our ignorance upon the cause of death in a few of those cases classed as "Delayed Chloroform Poisoning."

Dr. Swayne was somewhat puzzled as to the rapidity of the pulse in Dr. Edge's case. He had had several cases showing the prodromal symptoms of poisoning and had found that acetone and diacetic acid were both fairly common after chloroform. No rapidity of the pulse, however, is shown and therefore he thought that in Dr. Edge's case the reason of the symptoms lay rather in some unsolved metabolic cause.

Mr. Christopher Martin read a communication on a case of

Male Pseudo-hermaphroditism,

which appears on page 148.

Dr. Edge asked if there was an explanation of the cause of sex.

Mr. Beckwith Whitehouse described a somewhat similar case of pseudo-hermaphroditism that he had seen at St. Thomas's Hospital under the care of Dr. Walter Tate.

Mr. Beckwith Whitehouse showed a specimen and read a paper on

Torsion of the Spleen simulating Ovarian Tumour; Splenectomy; Recovery,

which appears on page 161.

Dr. Ewen Maclean, Dr. Pinnigar, Mr. Christopher Martin, and others took part in the discussion.

Dr. Newnham read notes on a case of

Bone Crochet Needle in the Abdominal Cavity.

The patient, L.P., aged 32, a married woman with five children living, was admitted into the Bristol General Hospital on July 5th, 1911, with the symptoms of an early miscarriage. She gave the history that having missed three periods she attempted to procure a miscarriage by introducing a crochet hook into the vagina. This slipped from her fingers, and could not be recovered.

Under an anæsthetic some small pieces of placenta were cleared out from the uterus and nothing else abnormal was noticed. The next day her temperature rose to 101° and she complained of great abdominal pain, particularly in the right iliac fossa. She was not sick, but her temperature and pulse remained high for a week, and she still maintained that she had great abdominal pain. She was still convinced that the hook had not come away.

On July 14th an *x*-ray photograph was taken and a foreign body such as she described was then seen to be on the right side in the region of the broad ligament.

On July 16th the abdomen was opened in the middle line. There was a condition of general peritonitis. The intestines were all matted together so tightly that it was quite impossible to separate them at any spot. However on pressing down the hand in the region of the right broad ligament the end of the hook was felt, and was gradually manipulated until the other

end appeared between two folds of the intestines. It was then easily drawn out. The abdomen was closed, the operation having taken 25 minutes. The temperature dropped to normal next day, no bad symptoms of any description ensued, the patient left the hospital on the 28th day quite well, and returned to Canada.

Dr. Purslow stated that he had had a very similar experience to Dr. Newnham's, but in his case the needle had probably only entered the broad ligament.

Dr. Ewen Maclean remarked upon the extraordinary fact that abortion is so frequently and so successfully produced by patients themselves by this means. It is by no means easy to pass an instrument through the cervical canal and he wondered that serious injury was not brought about more frequently than appears to be the case.

The Hon. General Secretary communicated a letter received from the Editor of the *Journal of Obstetrics and Gynæcology* suggesting that the Society should elect a representative to serve on the Editorial Committee of the said *Journal*.

Dr. Purslow proposed and Dr. Newnham seconded that Mr. Beckwith Whitehouse be appointed to serve as the representative on this Committee. Mr. Whitehouse was unanimously elected.

MIDLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

Meeting held at Birmingham, January 7, 1913. Dr. Malins, the President, in the Chair.

The President announced that the Council had accepted an invitation from the North of England Obstetrical and Gynæcological Society to take part in a Joint Meeting with the North of England, Glasgow, and Edinburgh Societies, to be held in Manchester upon some date to be fixed in May next. The names of those members of the Society wishing to attend this meeting should be forwarded to the Honorary General Secretary without delay.

Dr. Thomas Wilson read notes upon a case of

Endothelioma of the Undescended Testis occurring in a Male Pseudo-hermaphrodite.

a report of which appears on page 142.

Dr. Purslow asked if there were any records of a case of true hermaphroditism.

Mr. Beckwith Whitehouse thought that the occurrence of periodical hæmorrhages was a point of much interest. He was at a loss to know whence the blood came. Furthermore, if it was a case of true menstruation, the supposed necessary hormone must have been produced by the testicle. The only alternative explanation is that the gland in the right labium was an ovary, the case being thus one of true hermaphroditism. As regards the histology of the tumour, he was not quite prepared to admit that it was undoubtedly an endothelioma. It was an obscure neoplasm in which cells of an embryonic type were present and to which the term sarcoma could be applied. Beyond this, he did not think it was possible to dogmatise.

Dr. Edge agreed with the difficulty raised by Mr. Whitehouse as to the explanation of the alleged catamenia. He suggested that the so-called testicle was in reality an ovary containing various embryological elements,

and that what appeared to be seminiferous tubules really consisted of mesonephric ducts. The specimen was referred to the consideration of the Pathological Sub-Committee.

Dr. EDGE showed a uterus, the seat of early chorion-epithelioma, and by means of the epidiascope demonstrated microscopical preparations of the same.

Dr. WALTER SWAYNE thought that it would be interesting to know definitely in what proportion of cases chorion-epithelioma has been preceded by vesicular mole. He imagined that it was far less common than is generally thought. In two cases that had come under his observation, a normal pregnancy had on each occasion preceded the development of the tumour. He also wished to draw attention to the fact that occasionally chorion-epithelioma undergoes spontaneous cure. A deposit will fibrose and become innocuous. A patient of his six years ago that developed metastases in the lungs, with bloody sputum, had recovered completely and was well to-day.

Dr. EDGE agreed with Dr. Swayne's remarks upon the advisability of ascertaining in what proportion of cases chorion-epithelioma supervenes upon vesicular mole. If it was as much as 40 per cent. of cases, as had been stated, then to him this was an indication to remove the uterus for the latter condition. His experience was that deposits do not fibrose.

A discussion took place upon

THE TREATMENT OF OBSTRUCTED LABOUR.

Dr. THOMAS WILSON in opening the discussion, said that parturition is sometimes termed a natural process, emphasis being put upon the adjective to imply that the process should be easy and safe. The same proposition may be made to apply to respiration and the circulation of the blood, and just as the exercise of these functions may be upset in divers ways so as to become not unnatural, but certainly difficult or pathological, so may the process of childbirth meet with difficulties. Among women who live as nearly as possible in a state of nature, difficult labour must often arise from disproportion between the pelvis and fœtus, fœtal tumours and malformations, and many other causes. How much more frequent, therefore, may difficult labour be expected to be among women raised under the conditions of a civilisation where they are pampered, over-fed, and under exercised, or work like beasts of burden, and half starved. One of the most remarkable facts of existence is the astonishing success with which nature carries out her duties in spite of the obstacles thrown in her way deliberately or without thinking by man. When we consider the circumstances under which the bulk of our population are living and have lived for generations, it is matter for wonder not that parturition is sometimes difficult and dangerous, but that it is not generally so.

A satisfactory definition of the term 'Obstructed Labour' is not possible. I suppose we should all agree roughly that a normal labour is one in which a full term child of average size presents by the head in a pelvis of average size and shape, and in which the process of delivery is effected by the natural efforts within a reasonable time, say 24 hours in a primipara, and 12 hours in a multipara; the occiput rotates forward under the pubes, the mother's temperature and pulse are not raised above 100. An obstructed labour is one in which some factor is present that interferes with such a normal sequence of events. Obstruction is met with in all degrees, and gives rise at one end of the scale to little interference with the presentation of the fœtus or mechanism and duration of delivery, and at the other, in

the absence of skilled help, to the death of the mother and the child. Very many women, who recover after an obstructed labour, are left with general health more or less impaired, and the organs of generation, as well as the bladder or rectum injured or maimed by tearing and crushing due to the efforts of the patient and her attendants, and to the effects of septic infection. It is impossible to tell the proportion of women so spoiled; we cannot even learn the number of women who lose their lives as the direct result of obstructed labour, because a large proportion of such deaths are not registered under the appropriate headings, but are included among the deaths from puerperal sepsis.

The busy practioner in midwifery may work for years, and attend hundreds of labours without seeing a severe case of obstruction. Cases slight or moderate in degree are common enough, but they yield readily to forceps, and as the exigencies of practice render difficult the exact observation of the whole course of labour, many such cases pass unnoted, and even unperceived at the time, though their baneful effects on the woman's general or local health may afterwards be life long. The most frequent cause for neglected cases of obstruction is failure on the part of the patient or midwife to call in medical advice at a sufficiently early stage. But there is also a too prevalent idea that the whole art of midwifery consists in extracting the fœtus, gently if possible, but extracting by any means. It sometimes appears that failure to deliver a child by the forceps is considered to be a slur on professional skill. *Non vi, sed arte,* is a maxim too often forgotten in midwifery. It sometimes happens that a practitioner, lulled into a false sense of security by a long succession of easy cases, may fail to recognize an obstruction in time for the best treatment to be applied. The remedy for much of the illness and suffering arising from obstructed labour must be sought in the better teaching of midwifery, which in the future will have to be more practical and clinical than has been possible in the past.

In a large community cases of severe and often fatal obstruction are by no means uncommon, and often drift into a hopeless condition before proper help is secured. One of the common types occurs in young primiparæ with contracted pelvis. A few years ago I was sent for early one morning by two medical friends, who had been up all night and were both exhausted by their efforts to deliver with forceps a girl of 22 with a flat pelvis, the conjugate measuring just over 3 inches. The patient was removed to hospital, where delivery of a dead child was effected by a very difficult craniotomy. The woman recovered after a struggle, and with cervix and vagina cicatrized and narrowed after sloughing. Since then I have twice delivered her by Cæsarean section. In multiparæ obstructed labour occurs not uncommonly from transverse presentations, the growth of a tumour, and other causes. For example a multipara was sent into the General Hospital, Birmingham, with ruptured uterus; the midwife had been sent for three days previously, but found the patient sitting up by the fire drinking with some boon companions. The patient refused to be examined, and repeated the refusal on the two following days, until the waters had broken for a long time and the fœtal hand had come down.

The causes of obstructed labour are manifold. On the maternal side abnormalities of bony pelvis or of the soft parts, tumours and cicatrices. On the part of the child large size, malformations such as hydrocephalus, and wrong presentations. The subject can be best studied in connection with alterations in the bony pelvis, the size of which permits actual

measurements. Anyone with a competent knowledge of labour in contracted pelvis is in a position to determine the treatment of obstruction from whatever cause arising. By proper care obstructed labour can generally be foreseen, and its ill-effects obviated. Too often the doctrine of averages leads to the assumption that a labour will be normal. A better rule is to regard every labour as likely to be obstructed, or in some other way complicated; here emphatically forewarned is to be forearmed. Every woman, who engages a medical man or a midwife to attend her first labour, should at least have the external pelvic measurements taken. If these differ notably from the normal average an internal examination should also be made. In the case of a patient who has passed through previous labours, careful enquiry should be made into their history. Women with slight or moderate degrees of contraction of the pelvis are often prolific, and it is common in them to obtain a history of steadily increasing difficulty in the successive labours. The explanation is to be found in Matthew Duncan's observations that the birth weight of the children of a woman gradually increases until her age is 35, after which it again diminishes. My own experience leads me to believe that this rule is true, and I have often applied it with advantage in deciding upon the treatment to be pursued in a labour.

In a doubtful case a knowledge of averages will not help us much. The problem is an individual one, and we must endeavour to ascertain the relative proportion betwen the size of the fœtus and that of the mother's parturient canal. Attempts to estimate the size of the fœtus by measuring the height of the uterus above the pubes or by measuring the child's head by calipers are of comparatively little practical use. The best method of attempting to solve the problem in any difficult or doubtful case—one that I have frequently practised, and can strongly recommend for general use—is to make a careful examination of the patient under an anæsthetic at the thirty-sixth week of pregnancy, or, in some cases, two or three weeks earlier. The internal condition of the pelvis is explored, the height and inclination of the symphysis examined, any projection of the promontory observed, and the diagonal conjugate accurately measured. With Skutsch's pelvimeter the true conjugate, and the transverse diameter at the brim can be measured with tolerable accuracy. Contraction at the outlet is more common than is usually understood, and the diameters here should also be measured. Afterwards an endeavour is made to compare the size of the fœtal head with the inlet of the mother's pelvis. The patient is placed on the back with the knees drawn up and separated, and the head of the fœtus is grasped by the examiner's left hand, and pressed down into the pelvic brim as far as possible; sometimes an assistant can be employed to press down the head. The examiner with two fingers of the right hand in the vagina then examines the pelvis internally, feeling round the sulcus between the child's head and the side of the pelvis, and noting how much of the fœtal skull can be felt. If the head is large relatively to the pelvis it cannot be pushed down through the brim, and will be found bulging forward over the pubes. The amount of bulging can be estimated by using the thumb over the front of the pubes in connection with the internal fingers. In such a case induction may be started at once if the bulging is not very marked, or, if the head appears to be relatively very large, it may be decided to allow the pregnancy to go to term, and perform Cæsarean section. If the head can be pressed readily into the brim the estimate of the relative sizes will enable us to decide whether to induce labour in one,

two or three weeks' time, or to allow the pregnancy to proceed to full term. The examination just described is sometimes called "Müller's Impression" method. In this country is has been specially described by Munro Kerr, who modified it by the use of the thumb, as above described, to estimate the bulging.

In many cases careful examination allows us easily to form an opinion as to the best course to pursue in reference to the expected labour. In a primipara, granted a child of average size and development, and a pelvis of the normal 5 inches transverse measurement at the brim, when the true conjugate is estimated to measure $3\frac{1}{2}$ inches or more, the pregnancy should be allowed to advance to term, and the course of labour carefully watched and help given if and when necessary by the forceps. If the true conjugate is 2 inches or less, delivery by the natural passages will be impossible even by craniotomy. In such a pelvis even when labour has been allowed to drift until the woman is hopelessly septic Cæsarean section will be necessary. When the true conjugate is less than $2\frac{3}{4}$ inches there is no prospect of obtaining by the natural passages a living child with a reasonable choice of survival. The choice lies between craniotomy of a living child and Cæsarean section. As the conjugate diminishes, the difficulty and danger of craniotomy rapidly increase. Where the diagnosis is made, as it should be during pregnancy, Cæsarean section is indicated. Where the condition is only recognized late in labour, possibly after repeated attempts at delivery, if the child is dead, craniotomy must be done, but if living, choice is to be made between perforation, and a highly dangerous Cæsarean section followed by removal of the uterus; the child will, I think, usually be sacrificed, but such an event should be infinitely rare.

The cases in which the true conjugate lies between $2\frac{3}{4}$ ins. and $3\frac{1}{2}$ ins. are those which furnish most of the difficult problems. In them we have a choice of forceps or version with eventually craniotomy, of symphysiotomy or pubiotomy, or of Cæsarean section or induction of premature labour. Induction of premature labour is of little use when the fœtus is below thirty-six weeks' development, and should not be done earlier than the thirty-fourth week, since the chances of survival of such a child are small, even with the help of an incubator, and the most skilled nursing. A fœtus of average size and development at the thirty-sixth week will pass through a pelvis with a conjugate of about 3 inches. Labour should rarely be induced in a first pregnancy. We are often surprised to find a living child born at term through a pelvis that appears to offer grave difficulties, and it is good practice to regard the first labour as a test or experimental one, and to watch its course and result very closely; by so doing, much information may be gained that will be useful in subsequent deliveries. In multiparæ the results and difficulties of previous labours afford useful indications as regards treatment.

In every case of labour, whether difficulty is expected or not, the practitioner should be called, and attend as soon as possible after the pains begin in order to make a full examination. In a doubtful or difficult case the conduct of labour should be undertaken at the outset with a clear view of all the possibilities, and a full recognition of responsibility. In an ordinary case the cleansing of the patient's parts by soap and water followed by lysol will generally suffice, but where there is the possibility of difficulty no internal examination should be made until the parts have been specially prepared as if for an operation. For this preparation the patient should be anæsthetised, the labia should be shaved, and the vulva and

neighbouring parts of the thighs and abdomen thoroughly scrubbed with soap and water followed by spirit, and then by a solution of perchloride or biniodide of mercury. The vagina should be copiously douched with lysol solution, and then, and not till then, a careful and thorough vaginal examination should be made, and the size of the head estimated in addition to the pelvic brim. In making this examination care must, of course, be taken not to rupture the bag of membranes. If now it should appear that Cæsarean section is necessary or that symphysiotomy or pubiotomy may be called for at a later stage, no harm has been done, while a knowledge as full and accurate as may be has been gained of the conditions present.

The importance of such a cleansing and examination cannot be too strongly emphasised. The vagina and cervix have a wonderful power of resistance against invading germs, but this resistance has its limits, and it may easily happen that one vaginal examination made on a patient who has been imperfectly cleansed may be fatal to the success of an operation that later becomes necessary, and this remark applies with increasing force to the repetition of useless or imperfect vaginal examinations, and to a repeated or prolonged, or, still worse, too early use of the forceps, especially in an unsuitable case.

Where labour has been neglected, the patient becomes seriously ill with an anxious expression and drawn features, the skin is hot and dry, the tongue furred and yellow, becoming dry and brown, the pulse steadily increases in frequency, and the temperature rises to 101, 102 or more. The uterus retracts off the fœtus expelling it into the thinned lower uterine segment, cervix and vagina, the abdomen is then tender, the upper part of the uterine tumour hard, the lower distended and thin walled; a groove, the ring of Bandl, passes across the uterus between the two segments, the vagina feels hot and dry, or there is a discharge of a thin watery or turbid fluid, the fœtus is dead and probably beginning to decompose. In such a condition where delivery is possible by the natural passages it must be effected by craniotomy or forceps. Version is strictly contra-indicated since the introduction of a hand will rupture the vagina or lower segment of the uterus. Where, as in an obstructing pelvic fibroid this condition of so-called contraction of the uterus is developed, abdominal section is necessary; the septic uterus must be removed with the fœtus. In the preparation of such a case for operation copious intra-uterine douching with saline solution is likely to prove of value. The free use of iodine to the vagina before commencing operation, and again from the abdominal side when the vagina is divided, has been of advantage in my hands, so also has free drainage by gauze and rubber tubes.

These cases of neglected obstruction of labour must always be uncertain and unsatisfactory in their results. A woman whose exercise of her natural function of reproduction results in the total loss of the organs subserving that function has no particular cause for gratitude to our art. We should take time by the forelock and endeavour to help our patients to meet their troubles at least half way. This we can do best, as I have endeavoured to indicate, by careful observation and enquiry during pregnancy, by intelligent watching and preparedness during labour, and, in short, by bringing to the consideration of the process of parturition the same interest and attention that we are taught to devote to any other function of the body that may become morbid or pathological.

Dr. PURSLOW referred to the damage frequently produced by the injudicious use of forceps. Practically every case of badly lacerated cervix is due to forceps delivery. Some of these mishaps are due to slipping of the

blades. Therefore in selecting an instrument, care should be taken to obtain one in which the possibility of this accident occurring is reduced to a minimum. He preferred Milne Murray's axis traction forceps in every way. He also emphasised the great advantage of having a proper anæsthetist present whenever difficult forceps delivery is contemplated. Although craniotomy upon the living child is always to be deplored, he thought that in some cases it is still quite justifiable, when local surroundings absolutely preclude the possibility of performing Cæsarean section.

Mr. CHRISTOPHER MARTIN concurred in the importance of selecting a method of treatment in accordance with the patient's surroundings. What is good practice in a properly equipped institution is impossible in a slum, and one is not justified in submitting a mother to risk for the sake of a doubtful child. He thought that reliance could not always be placed upon the previous obstetrical history in guiding future treatment. For example, he remembered the subject of a prospective Cæsarean section for pelvic contraction, who delivered herself with ease. He was not an advocate of the operations of symphysiotomy and pubiotomy and thought that they would eventually fall into disuse. The tendency now-a-days is to perform more and more Cæsarean sections. If this operation is undertaken before labour sets in, the risk is very little more than with ordinary labour.

Dr. EDGE asked if diet can in any way influence the size of the fœtus. He quite agreed with Dr. Purslow's remark upon the damage done by forceps, but at the same time had seen cases of severe cervical laceration without any instrumental interference. With regard to "suspect" cases of Cæsarean section, he had practised with success a method of delivering the membranes covering the lower uterine segment into the vagina by pushing them through the cervix. He did this to obviate infection, inasmuch as he thought that the membranes covering the internal os and the lower uterine segment were most likely to be contaminated.

Dr. WALTER SWAYNE said that with increasing knowledge of the subject, the difficulties seemed to be added to. He wished to refer particularly to those cases of elderly primiparæ in whom the pelvic measurements are practically normal and yet when labour was in progress, it was necessary to deliver by craniotomy. The cause of dystocia is undoubtedly due to a rather large child. The difficulty is usually not recognised until labour has been in progress for some time. In such a class of case, pubiotomy or symphysiotomy may be valuable, although he was not strongly in favour of either as an operation of election.

Dr. SMALLWOOD SAVAGE thought that symphysiotomy and pubiotomy might be of use in producing some enlargement of the pelvis after forceps have failed, and that these operations should be reserved for such cases. He had performed pubiotomy upon two cases and had been satisfied with the results. Sepsis is undoubtedly a contra-indication to the operation, but it is difficult at the time to say which cases are infected.

The PRESIDENT observed that the greatest troubles in the treatment of obstructed labour are usually due to want of diagnosis of position. Frequently the forceps are applied to undiagnosed occipito-posterior positions, with disastrous results. No speaker had referred to the advantages of version in preventing obstruction. In some cases of flat pelvis, he had found it a very easy and effective operation. With regard to Cæsarean section, it will undoubtedly replace craniotomy and become the operation of election and not necessity. Craniotomy performed upon the living child is a barbarous and wicked operation, and should never be entertained.

Dr. Malins also referred to the importance of the presence of meconium with a head presentation. It is a sure indication of impending death of the child.

Dr. THOS. WILSON, in his reply, thought that it was sometimes difficult to avoid craniotomy upon a living child. Quite recently he had to choose between this operation and Cæsarian hysterectomy in a case that was obviously infected, and he had preferred the former. He was thus in accord with Mr. Martin's views, viz., save the mother primarily, but if *possible* save both.

In Catholic countries on the other hand conservative midwifery of the fœtus is of greater import.

As regards diet, he did not think that it had much influence upon the size of the child, although a diet as free as possible from carbohydrates and fluids had been recommended to produce reduction of weight.

He had expected to hear something upon pubiotomy in the course of the discussion and had not been disappointed. Personally he had performed five pubiotomies and had had no cause to regret the same from the maternal side. The use of this operation would always be reserved for "borderland" cases, in which the fœtus was alive. It should not be employed in first labours nor yet again when infection was present.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF OBSTETRICS.

Meeting Friday, December 13 1912, *the President* (A. J. HORNE, F.R.C.P.I.) *in the Chair.*

Myomatous Uterus.

The PRESIDENT showed a specimen of myomatous uterus, which was removed from an unmarried woman, aged thirty. Four years ago the patient had a bad attack of diarrhœa, lasting for about three weeks. A large swelling was noticed in the lower part of the abdomen, and at the time she complained of great irritation just above the symphysis pubis. The swelling gradually increased in size for about a year, and then grew more rapidly. In the morning it was found that the lump was generally on the side on which the patient lay during the previous night, and when she leaned to one side she could feel the lump move to the opposite side. Menstruation was regular and normal in quantity. On admission to hospital the patient looked healthy. On inspection the abdomen appeared very large, and equally so on both sides of the middle line. On percussion there was dullness over the whole part. When first seen the tumour was in the middle line, and presented so few characteristic features that the diagnosis was difficult. It was impossible to make a satisfactory vaginal examination without anæsthesia. However, from the mobility of the tumour, the conclusion was formed that it was a fibroid, although menstruation was quite regular. When the abdomen was opened large veins were to be seen all over the tumour, so that there was a doubt as to whether it was a case of pregnancy. It was, therefore, thought necessary to open into the central line of the tumour before removal, when it was found to be a myomatous uterus. The tumour weighed $8\frac{1}{4}$ lbs.

Prof. ALFRED SMITH said that the procedure he usually followed in these cases was simple—*i.e.*, if the uterus be pregnant intermittent contractions could be observed. If the uterus contracted it was pregnant, and if it does not it is non-pregnant. A sponge out of hot water pressed over either cornua of the uterus would help to stimulate the contraction. He perfectly

sympathized with the difficulty in diagnosis until he adopted the above-mentioned procedure.

Dr. PUREFOY observed that the case demonstrated a point of importance, even when there was an opportunity for ocular inspection—viz., the impossibility of saying whether a tumour is solid or cystic. Reference had been made to the difficulty of determining in a case of fibroid uterus whether pregnancy is present or not. This he considered a point of extreme difficulty, or, probably, impossible. The large veins over the specimen also probably increased the difficulty of diagnosis.

Dr. HORNE, replying to the remarks, said that since he had heard the opinions expressed he considered himself warranted in bringing the specimen before the Section. The point raised by Dr. Smith he considered important, and he (Dr. Horne) had held the tumour in his hands for a considerable time, but felt no contractions or fœtal movements, yet he was not convinced that it was not a pregnant uterus, but he thought the idea of applying hot cloths to encourage the contraction of the uterus a very important one.

Polypus Complicating Inversion of Uterus and Illustrating the difficulty of Diagnosis.

Dr. E. H. TWEEDY said the patient was sent to him with a diagnosis of inversion of the uterus. She was a union patient in a far-advanced state of anæmia and shock. She was half-witted. Her condition was so serious he did not dare to examine her for at least eight days. Ergot and stimulants were administered and the vagina was plugged. At the expiration of a week he found a round tumour protruding to within an inch of the vulva. It bled easily. Under anæsthesia he failed to make a diagnosis by any of the recognized methods. The cervix could not be felt. Rectal and bimanual examination afforded no information. He, however, established the diagnosis by a method not before suggested. Two fingers were passed into the vagina above and below the tumour, and these were placed on its pedicle. The feeling of the latter was unmistakably that of uterine tissue. He thought it was worth remembering that if there is inversion of the uterus with a polypus the pedicle will give this characteristic feel. He proceeded to remove the myoma, and in doing so he opened a cyst which contained fluid under great tension. There was very severe bleeding from the wound. The uterus was easily inverted by the application of three-bullet forceps. Continuous rectal irrigation was afterwards kept up for twenty-four hours.

Dr. TWEEDY also showed a specimen of sloughing myoma, the removal of which per vaginam caused acute inversion of the uterus.

The PRESIDENT said the case showed one of the interesting effects of polypus complicating inversion. He mentioned that polypus complicating inversion was very rare, and the points raised as regards diagnosis were of great importance.

Dr. SOLOMONS said it seemed to him that the treatment accorded to the patient before operating had saved her life, whereas immediate operation would probably have killed her. The severe constitutional symptoms often associated with uterine polypi, both large and small, were never dealt with sufficiently in text-books. He wondered if a diagnosis might have been more easily made by splitting the perineum, whereby the operation itself would have been facilitated.

Dr. SHEILL thought a point of interest was the reference to the palpation of the pedicle of the tumour. He found that the uterus felt like a collapsed tube, whereas a tumour was not hollow and was more resistant.

Dr. PUREFOY said the difficulty of diagnosis in these cases in which polypus had given rise to inversion was considerable, especially where the polypus was sessile. In such cases it became exceedingly difficult to determine how much of the tumour was polypus and how much was uterus. He congratulated Dr. Tweedy on the jubilant way in which he spoke of re-inversion of the uterus. He had three cases of the kind where the inversion complicated parturition, and some months elapsed before they came under treatment. In each case the reposition was effected by steady pressure applied to the fundus while the cervix was held by two-bullet forceps. He had shown at a meeting of the Section a simple repositor which had proved very helpful in the proceeding.

Dr. TWEEDY, in replying to the remarks, said he found it very easy to push back the uterus in one case, but in the second there was some difficulty.

Interesting Complications of an Hysterectomy.

Prof. ALFRED SMITH said: Having performed a subtotal hysterectomy he proceeded to make the peritoneal toilette, when he found his finger pricked by some sharp instrument. On investigating the cause he found the point of a needle sticking through the wall of a small intestine. On searching further more needles were found, some lying in the omentum, others projecting from the wall of the intestine, but covered by a smooth covering, as if a diverticulum had been formed from the intestinal wall. The appendix, which was markedly hypertrophied and congested, was removed. An *x*-ray photograph revealed two needles and one pin in the lumen of the appendix. The patient complaining of more abdominal pains, aggravated on pressure, was skiagraphed. Two of the plates located three needles, one on the right side evidently broken, another on the left side at pelvic brim, and a third somewhere about the pubis. A second laparotomy was performed, and all three needles successfully removed. In all, ten needles and one pin were found.

The PRESIDENT said the case demonstrated further the difficulty of diagnosis. It had been suggested that these needles were probably taken in a packet when the patient was a child, so that probably all the needles were taken in at the same time, and it was well known that when a needle entered the body it travelled in the most extraordinary manner to different parts of the system.

Dr. PUREFOY referred to the case of a lady who had come under his care, having swallowed during an epileptic fit, a plate with four teeth on it. They, however, passed through the alimentary canal in a fortnight afterwards.

Dr. JELLETT referred to a case treated at the Adelaide Hospital some years ago in which thirty-nine needles were removed from a girl's stomach, and within two years she returned with a further crop.

Dr. ROWLETTE said that some years ago, in a post mortem examination at Steevens's Hospital, he found an inch and a half pin in the appendix which had given rise to abscess of the liver. He considered that foreign bodies were more common than reports showed as the cause of appendicitis.

A CASE OF FIBRO-SARCOMA OF THE OVARY.

Dr. GIBBON FITZ-GIBBON read a paper on a case of fibro-sarcoma of the ovary removed from a patient aged forty-two. The tumour probably existed for over three years, and weighed over 10 lbs. He thought that all solid tumours of the ovary should be looked upon as malignant at time of operation, and the other ovary removed.

Dr. JELLETT referred to a case of sarcoma of the ovary on which he had seen Sir William Smyly operate some years ago, which was of interest on account of the after history. The tumour was an entirely capsulated growth. The patient was a girl aged nineteen or twenty, and she went on very well for a short period, but then began to get worse. She got a high temperature, which eventually rose to 106° or 107°. She then lost control of the lumbar centres, and a tumour appeared under the skin over the lumbar spine. She died, and it was found that secondary growths had developed behind the glands of the peritoneum and had cut through the spinal column. He agreed with Dr. FitzGibbon as to the removal of both ovaries in cases of malignant tumour affecting one, and also in treating all solid tumours of the ovaries as malignant at the time of operation.

Dr. NEILL referred to a case in which Dr. Kidd, while Master of the Coombe Hospital, removed two sarcomatous ovaries. There was great difficulty in arresting the hæmorrhage, as the tissues were very degenerate. There was great extension of the disease to the peritoneum. The case was reported in the *Transactions*, vol. xviii, 1900, p. 297.

Dr. SMITH said his experience was that ascites was generally associated with malignant tumours. He had come to the conclusion owing to the bad subsequent history of these cases that the mere removal of the ovary was bad surgery. He was firmly convinced that whenever one or two solid ovarian tumours were found the uterus should also be removed, as there was absolutely no use in leaving it behind.

Dr. PUREFOY said the case appealed to him with regard to three points—(1) He had noticed that in the early stage of their growth these tumours are associated with good health. (2) The difficulty of distinguishing between solid ovarian tumours and fibroid with long pedicle. He recollected a case in which operation was postponed for some months because a tumour with a long pedicle was regarded as fibroid, and when it was removed it proved to be a malignant tumour of the ovary. Recurrence of the disease occurred a few months later. (3) The invariable recurrence which follows in the case of such tumours. This being his opinion, he could not adopt the view of Professor Smith—that when the tumour is suspected of being malignant the uterus should be removed, as it exposed the patient to increased risk without any compensating advantage. He considered, however, that recurrence might be delayed if the second ovary was removed. In these tumours much difficulty has been experienced in arriving at a just estimate of their exact histology.

Dr. ROWLETTE agreed with Dr. Purefoy that it was generally difficult to ascertain whether solid tumours of the ovary were sarcomatous or carcinomatous. It might require a very exhaustive examination of the tumour to arrive at a diagnosis. A point which he considered of help in judging during operation whether a tumour was malignant or not was that malignant tumours, when incised, presented as a rule a peculiar translucent and homogeneous appearance, innocent tumours being more opaque. He pointed out this characteristic in the specimen shown.

Dr. FITZGIBBON, in replying, said he was glad the Section seemed to be generally agreed as to the removal of the second ovary. With regard to going further and removing the uterus, he agreed with Dr. Tweedy when he said he did not consider it of much use. The involvement of the uterus in a case could only be as the result of metastasis, while the reason for removing the second ovary was on account of its histological relationship.

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THE "LEEDRO" SYRINGE. This syringe has been especially designed for high temperature injections to the cervix and vaginal vault. Its qualities appear to be that (1) the injection is made to impinge directly upon the cervix or its vicinity; (2) there is no risk of burning the Vagina or Vulva; (3) the injection is given slowly and continuously.

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